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THE PENNSYLVANIA MEDICAL JOURNAL

Current in Balcony

VOLUME 44

NUMBER 7

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IN THIS ISSUE

HYDATID DISEASE (ECHINOCOCCUS) IN NORTH AMERICA
Thomas B. Magath

◆

SYMPOSIUM ON FUNGOUS INFECTIONS

◆

ROUND-TABLE CONFERENCE ON INDUSTRIAL MEDICINE
Complete Stenographic Report
Pages 825 to 837

◆

SYMPOSIUM ON PYELITIS IN PREGNANCY

◆

GERIATRICS AND UROLOGY
An Editorial Dedicated to the Physician Who Sees Them First
Page 907

◆

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Officers' Department

CURRENT
NUMBER

APRIL, 1941

91st ANNUAL SESSION---Pittsburgh, October 6 to 9, 1941

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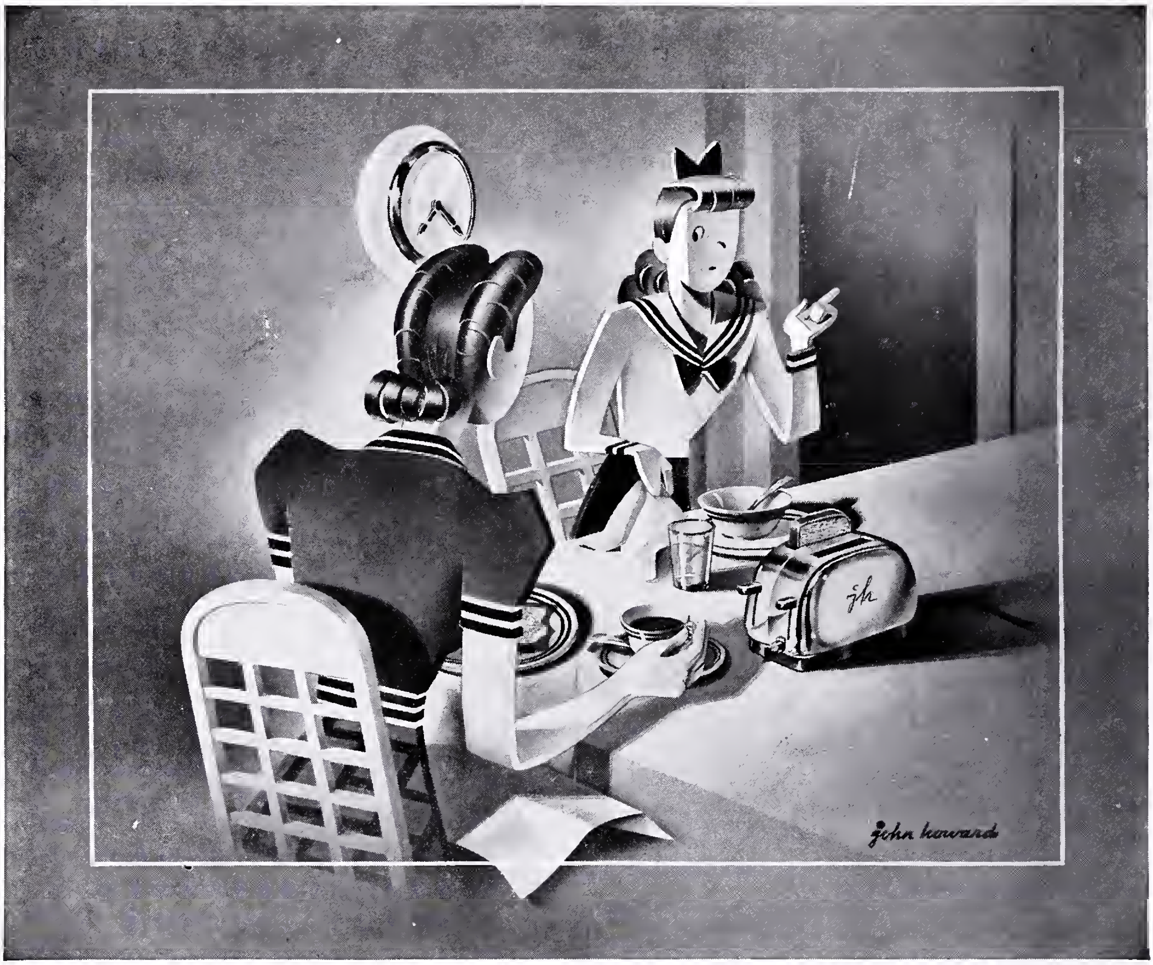

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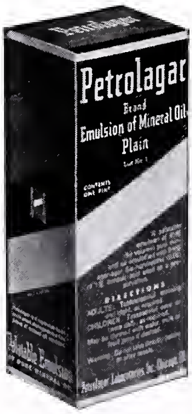

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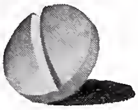

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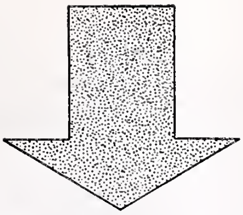

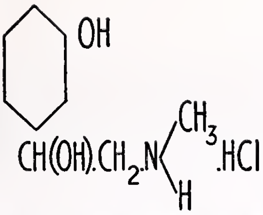

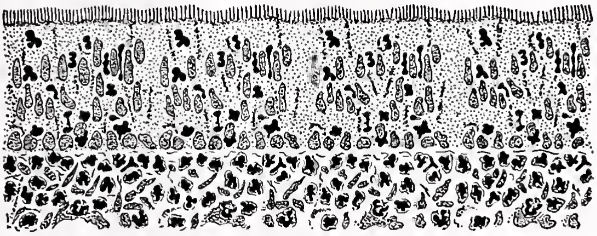

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LETTERS

A Good Idea

Gentlemen:

Dr. Hugh Chaplin, clinical professor, Department of Pediatrics, New York University and Bellevue Hospital Medical College, has this to say about comic magazines: "There is no doubt that many children are greatly disturbed by the lurid stories and frightening pictures appearing in a number of the comic strip magazines. To say that their minds are overstimulated puts it mildly. Not a few receive such violent mental shocks that their sleep is disturbed; it is weeks before the memory of the unreal and frightening tale gradually disappears from their sensitive and impressionable minds."

As an antidote for the lurid "comic" magazines which are read widely by children in spite of protests of parents and teachers, the publishers of *Parents' Magazine* announce a new bimonthly magazine, *True Comics.* It is the first educational magazine ever published in the popular "comic" format so attractive to children. There are about 75 so-called "comic" magazines, few of which even pretend to be funny. They largely dish up fantastic excitement, in colored picture form, portraying impossible, often grotesque characters.

The publishers of *Parents' Magazine* have no quarrel with newspaper comic strips, but believe with many pediatricians, child psychologists, and educators that the present "comic" magazines are definitely objectionable, overstimulating reading for young minds.

The first issue of the new magazine, *True Comics,* of which David T. Marke, young historian, is editor, features in 17 pages the life of Winston Churchill as "World Hero No. 1." Hendrik Willem van Loon, historian, author, and commentator, has contributed a picture story in his well-known style entitled "Famous Failure." Other picture-sequence stories, all in full color, depict the thrilling adventures and conquests of Simon Bolivar, South American liberator; the origin of the Olympic marathon; the curious story of the first naval submarine; the conquest of yellow fever in Cuba; and the story of George Rogers Clarke of Revolutionary War fame, the first chapter of an installment series on "Frontier Fighters"; also an illustrated picture, "My Greatest Adventure," by Lowell Thomas.

Shirley Temple, Mickey Rooney, Gloria Jean, Virginia Weidler, and Janet Cantor, the 13-year-old daughter of Eddie Cantor, are junior advisory editors of the magazine. Senior advisory editors are George H. Gallup, director of the Institute of Public Opinion; Gertrude Hartman, author of *The World We Live In;* Arthur T. Jersild, professor of education, Teachers College, Columbia University; Daniel C. Knowlton, professor of education, Social Studies Department, New York University; Clara Savage Littledale, editor, *Parents' Magazine;* David S. Muzzey, emeritus professor of history, Columbia University, author of *A History of Our Country* and many other historical books; and Hendrik Willem van Loon, famous historian, artist and author of *The Story of Mankind* and other best sellers.

The only similarity of *True Comics* to the present flood of "comic" magazines is in format. Its 64 colored picture pages portray exciting events of present and past history. Using the adventures of the world's greatest heroes and heroines as story material, the editors have created a magazine full of stirring drama that boys and girls of all ages will thoroughly enjoy. Parents have tried prohibition in their fight against the lurid "comic" magazines with little success. Now they have a wholesome substitute to offer that, we believe, their children will gladly accept.

George J. Hecht, *President,*
The Parents' Institute, Inc.,
52 Vanderbilt Avenue,
New York, N. Y.

Blood and Blood Substitutes

Gentlemen:

Among the new items proposed by the Subcommittee on Scope for admission to the new Pharmacopoeia are whole blood, normal human plasma, and normal human serum. As a number of medical groups were already studying the problem of the standardization of these products, it was believed desirable to endeavor to coordinate these studies through the assistance of an advisory board of experts and a series of public conferences.

The United States Pharmacopoeia Advisory Board on Blood Substitutes, to co-operate with and report through the United States Pharmacopoeia Subcommittee on Biological Assays, was thereupon established by the Committee of Revision and Board of Trustees. This board is made up of the following members: Dr. Perrin H. Long, member of the Committee of Revision and of Johns Hopkins University Medical School, chairman; Dr. Edwin J. Cohn, Harvard Medical School; Dr. Sidney O. Levinson, Deutsch Convalescent Serum Centre, Michael Reese Hospital, Chicago; Dr. Cornelius P. Rhoads, Memorial Hospital, New York City, and associated with the Blood Betterment Association of New York; and Dr. Max M. Strumia, Bryn Mawr Hospital, Bryn Mawr, Pa., and also a member of the Blood and Blood Substitute Committee of the National Research Council.

The members of the board held an initial conference in Washington, at the National Research Council headquarters, with representatives of the Surgeons General of the Army, the Navy, and the Public Health Service, also with representatives of the American Red Cross and the Medical Division of the National Research Council.

The general problem was discussed and the measures, now in force, under the supervision of the National Institute of Health, and also those under experimental study by those present, were reviewed.

Tentative monographs will be prepared and widely distributed to all who are interested. At as early a date as possible the members of the board will call a public conference to obtain the greatest possible assistance in fixing official standards.

Anyone who may have suggestions to offer or may

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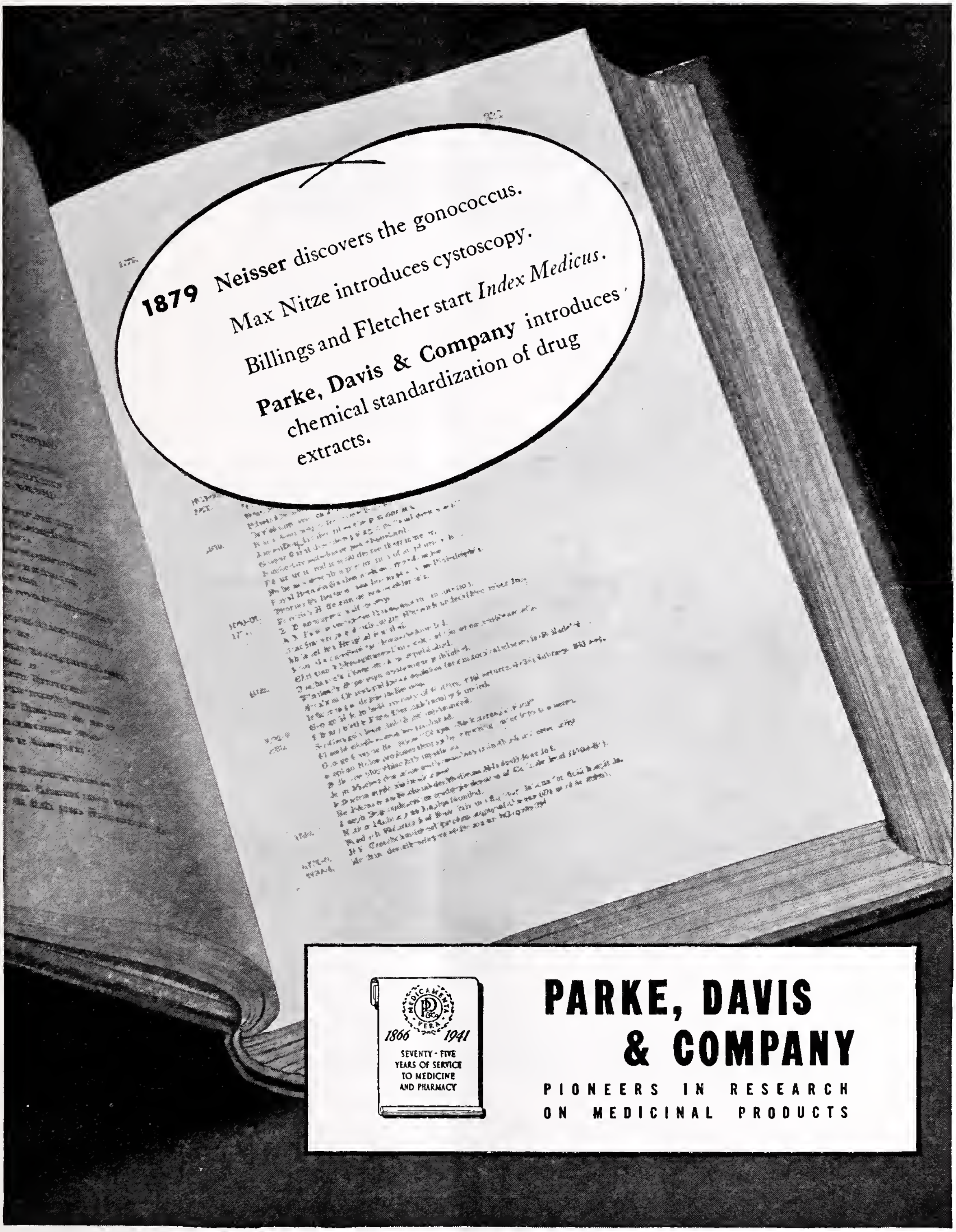

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be interested in obtaining forthcoming information is invited to communicate with the undersigned, chairman of the Revision Committee, 43rd Street and Woodland Avenue, Philadelphia, Pa.

E. Fullerton Cook, Ph.M.,
Philadelphia, Pa.

Tuberculosis Film

Gentlemen:

We have just completed a film entitled "Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis" which was produced under the medical supervision of Dr. James S. Edlin and which contains a foreword by Dr. Kendall Emerson, managing director of the National Tuberculosis Association.

This presentation discusses and demonstrates the use of pneumothorax in all its phases. A liberal use has been made of roentgen rays, postmortem specimens, and animated diagrams to illustrate the merits, complications, and mishaps of this treatment of pulmonary tuberculosis. Special stress has been laid upon the various complications that may attend both the induction and maintenance of collapse therapy.

An interesting demonstration of the effect of pneumothorax has been achieved by a cinematographic visualization of the actual collapse of the lung during the administration of air under fluoroscopic control. As far as is known, this has never before been accomplished.

Dr. Kendall Emerson states in the foreword of this film, "In the name of the National Tuberculosis Association, I wish to express my appreciation to the authors of this film, for their contribution to that ever pressing problem, the control of chronic pulmonary tuberculosis. We feel that such a presentation will serve to crystallize and correlate the teachings and clinical experience of the medical profession."

This film is believed to be a valuable addition to clinical experience in the teaching of collapse therapy. The film was previewed before a group of tuberculosis and health officials and we have received many favorable comments.

This motion picture was shown on Jan. 17, 1941, to the New York State Chapter of the Medical College of Chest Physicians and on Jan. 20 to the Pan American Medical Association. We have received favorable reviews in the *Medical Record, The Hospital Reporter and Guide, New York Tuberculosis and Health Association Journal,* and we expect many reviews in the February issues of other publications. The picture was produced by Anthony P. Gulotta, of Capitol Films of New York City, and any inquiries should be addressed to him.

Anthony P. Gulotta,
11 West 42nd Street,
New York, N. Y.

INDUSTRIAL MEDICINE

Whether one is engaged full time or but casually (see page 832 of this issue), it is important for the plant physician to inspect all safety devices in a plant regularly. Included in this inspection should be an investigation of all sanitary services. Do not hesitate to recommend improvements to your company.

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Hydatid Disease (Echinococcus) in North America

THOMAS B. MAGATH, M.D.
Rochester, Minn.

MIGRATION of human beings and their domestic animals has not only affected the economic, social, and religious affairs of man but has had profound effect on the dissemination and distribution of disease. Probably no disease shows this latter effect more clearly than that caused by Echinococcus granulosus, and one could not ask for a better experimental demonstration than that furnished by North America.

Insofar as man is concerned, it seems evident enough that the disease is not one native to this continent, but was introduced from the old country, making its first known appearance by a publication in 1822 about a patient seen by Low in 1808. Since then, Osler, Sommer and Lyon, and more recently I, have from time to time summarized the situation in regard to the disease in North America. This report will bring the matter to date as of the end of 1939.

While there should be interest in the location of patients with the disease in North America, an important point is the source of the infection, or the country in which the disease was contracted. It has been clearly established that the life history of the parasite is completed in Canada and the United States, and that man in these countries occasionally plays a rôle in this cycle; but as will be seen, the majority, indeed 95 per cent, of persons have contracted the disease in foreign countries. The most important consideration is whether or not the disease is gaining a foothold in native Americans. Predictions made during the past half century have for the most part indicated a belief that the disease would become more prevalent in this country.

The question of correctness of diagnosis will always be a factor in any statistical analysis of cases reported. In general, the actual demonstration of hooklets or typical scolices must remain the only final evidence of the disease. On the other hand, there are some important diagnostic tests available. Of these, the two most important are the Casoni intradermal test and the complement fixation test. Investigators who have had occasion to perform a large number of these tests have in general reported accuracy in from 85 to 95 per cent. It has been known for a long time that the Casoni reaction will remain positive for many years after a patient has had a cyst completely removed. Indeed it is not unlikely that in most instances the reaction remains positive for life. In general, it may be said that the complement fixation reaction remains positive as long as a living cyst is present within the body of the host. Thus some time following the removal of a cyst, or after a cyst has become completely calcified, the complement fixation reaction usually is negative.

For performing the Casoni test a large number of antigens have been shown to be available. One may use the filtered Berkefeld fluid from the cyst of any domestic animal or from man or, as has been shown recently by H. L. Chung and T. T'ung and by H. M. Rose and J. T. Culbertson, the cyst fluid of other tapeworms (cysticerci) gives equally satisfactory results. The nonspecificity of the test was recognized by L. Morenas and J. Outeiriño some years ago. Rose and Culbertson recently have stated that hydatid fluids are difficult to obtain and that different solutions show wide variation in antigenic potency, while all seem to deteriorate more or less rapidly although carefully preserved. This has been the generally accepted opinion and for the complement fixation test it has been considered absolutely necessary to have fresh cyst fluid, unfiltered and unpreserved. After a number of experiments I have found it possible to preserve the hydatid fluid for many years in a satisfactory condition, both for the Casoni test and for the complement fixation test. This has been done by adding to the unfiltered cyst fluid sufficient merthiolate to make a final concentra-

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Read before the Section on Clinical Laboratory Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, October 2, 1940.

From the Division of Clinical Pathology, Section on Parasitology, Mayo Clinic, Rochester, Minn.

North America refers to Canada and the states and districts of the United States.

TABLE I

CASES REPORTED FROM CANADA AND THE UNITED STATES NOT INCLUDED IN PREVIOUS SUMMARIES

Case	*Author*	*Age, Years, and Sex*	*Date of Diagnosis*	*Date Reported*	*Origin of Infection*	*Apparent Residence*	*Location of Cyst*
1.	L. E. Schmidt	21 M	1915	1915	Greece	Illinois	Kidney
2.	H. L. Kretschmer	32 M	1921	1923	Greece	Illinois	Kidney
3.	C. Haight and J. Alexander	30 M	1923	1940	Greece	Michigan	Lung
4.	E. A. Graham, J. J. Singer, and H. C. Ballon	39 M	1923	1936	England	Missouri	Pleura Liver
5.	D. R. Melen	43 F	1925	1925	Italy	New York	Kidney
6.	A. Lightstone	36 F	1927	1938	Poland	New York	Liver Kidney
7.	B. L. Coley	58 M	1929	1932	Italy	New York	Bone
8.	B. L. Coley	26 M	1930	1932	Italy	New York	Bone
9.	C. Haight and J. Alexander	25 M	1931	1940	Argentina	Michigan	Lung
10.	C. J. Leslie	7 M	1935	1938	Italy	New York	Lung
11.	H. Neuhof	13 M	1937	1937	?	New York	Lung
12.	T. C. Lawson	67 M	1937	1939	England	California	Liver
13.	R. C. Cabot	50 M	1939	1939	Greece	Massachusetts	Bone

tion of 1:50,000. Cyst fluid which was preserved 5 years ago still gives excellent reactions. This particular fluid which was thus preserved for 5 years has been independently tested by Perez-Fontana and found to give very accurate results. Observations made on fluid thus preserved in Australia have also given equally satisfactory results, whether the fluid was of human or sheep origin.

I have found the Casoni intradermal reaction positive in every instance and the complement fixation reaction positive whenever a viable cyst was found. In one case a positive Casoni reaction was obtained in a patient who had been operated upon elsewhere and the diagnosis of cyst of hydatid disease made. On a secondary operation at the Mayo Clinic it was discovered at that time that he had a colloid carcinoma with metastasis throughout the peritoneum and no hydatid cyst was found. This is the only "false" positive reaction I have seen.

In Table I are listed the 13 cases* found in the literature since my last report, and together with those seen at the Mayo Clinic in 1939 (Table II) they make a total of 519 cases diagnosed prior to 1940 and reported up to the time of writing of this paper.

Sex and Age

Table III indicates that in North America men are far more frequently infected than women, the ratio being 1.77:1. This is in contrast to most reports from other countries, where in some series women have outnumbered men by almost 2:1. This has been explained on the basis that women pet and care for dogs more frequently than men do. However, in other series of cases, as for example those reported by Vegas and Cranwell, and in the comprehensive series by Perez-Fontana, the incidence was equal in the two sexes.

It seems apparent that, since about 95 per cent of cases in Canada and the United States occurred among immigrants, one must seek the explanation of the predominance of men in the distribution by sex of the immigrants to these countries. The figures available indicate that more men than women have come from centers in which the disease is endemic. Of the 29 persons who apparently contracted the disease in Canada or the United States, 19 were women and 10 were men, a fact which demonstrates further the likelihood that the predominance of male immigrants has affected the sex ratio.

The distribution by age as indicated in Table IV reveals a striking contrast between cases reported in North America and those from other countries. Here, the incidence in children is about one-fifth the incidence in endemic areas in foreign countries. Only 14 cases, or 3.5 per cent, of the total of known age, have been reported in children less than 12 years of age. This might be used as further proof of the fact that rarely have individuals contracted the disease in North America, and that the circumstances surrounding the transmission of the disease on this continent are different from those in countries

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* Some of the 14 cases recently reported by Rose and Culbertson may have been diagnosed prior to 1940, but their paper does not indicate the fact and hence these cases are not included in this series.

TABLE II

CASES IN WHICH DIAGNOSIS WAS MADE IN THE MAYO CLINIC, AND NOT REPORTED IN PREVIOUS SUMMARY

Case	*Age, Years, and Sex*	*Year Diagnosed*	*Year Seen in Mayo Clinic*	*Origin of Infection*	*Apparent Residence*	*Organ Involved*
1	32 F	1939	1939	Greece	Minnesota	Liver
2	41 F	1934*	1939	Russia	Manitoba	Liver
3	58 M	1939	1939	Lithuania	Illinois	Liver
4	50 M	1939	1939	Lithuania	Iowa	Kidney
5	43 M	1939	1939	Greece	Iowa	Liver

---

* Operated on in Manitoba and cyst found.

where the disease is common. Again, it is clear that more adults than children have emigrated to America. If children in their native land contract the disease and symptoms develop, they do not as a rule emigrate.

It has been commonly thought that most people acquire the disease during infancy. If this is true, in a certain number of cases the symptoms must become manifest rapidly, while in others there must be a delay of many years, even more than 20 or 30 years in some. It seems likely that in very young children the cysts grow more rapidly than in older children or adults. The young tissues are less resistant and hence the cyst manifests itself earlier. If this explanation is correct, one may conclude that the cases seen among adults represent infections acquired after early childhood, and such an explanation is in accord with experimentation and hypotheses advanced by Kahn.

TABLE III

DISTRIBUTION BY SEX OF PATIENTS IN CANADA AND THE UNITED STATES

Sex	*Lyon (1902) Magath (1940)*	*Since Report of Magath*	*Total*
Male	257	14	271
Female	149	4	153
Unstated	95	..	95
Total	501	18	519

Ratio of men to women—1.77 : 1.

Situation of Cysts

Examination of Table V will reveal the information that the situation of cysts in cases from Canada and the United States approximates closely that in cases from endemic areas in other countries. Upwards of 70 per cent of the cases have involvement of the liver, but practically no organ or system is immune from the disease. Secondary involvement of other organs and tissues from the liver has been frequently reported. A study of the occupation of patients gives no particular clue to the origin of the infection. Farmers do not seem to predominate, nor are cases found to be more frequent from rural districts than from cities.

As a majority of patients had acquired the infection in foreign countries, it is not possible to know under what conditions they lived at the time they acquired the disease.

Distribution of Cases

While the distribution of cases in North America is of interest, it does not offer a great deal of important information except in regard to the native cases. As might be expected, the majority of cases have been reported from large medical centers. For example, approximately 10 per cent of all cases have been seen in the Mayo Clinic. Insofar as the case reports permit, these have been allocated to the state which seemed to be the residence of the patient. From Table VI it can be seen that New York, Manitoba, California, Massachusetts, Pennsylvania, Illinois, Quebec, Minnesota, and Missouri account for approximately 75 per cent of the cases in which the residence is known. It is, of course, known that immigrants have tended to concen-

TABLE IV

DISTRIBUTION BY AGE OF PATIENTS IN CANADA AND THE UNITED STATES

				Percentage of Cases	
Age (Years)	*Lyon (1902) Magath (1940)*	*Since Reports of Magath*	*Total*	*Canada and United States*	*Endemic Areas in Foreign Countries*
0 to 19	23	2	25*	6.2	30.0
20 to 39	205	8	213	53.2	50.0
40 to 59	98	7	105	26.3	17.6
More than 59	21	1	22	5.5	2.4
Adult	35	..	35	8.8	....
Unstated	119	..	119	....	....
Total	501	18	519	100	100

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* Only 14 of these (3.5 per cent of total of known age) were less than 12 years of age.

TABLE V

SITUATION OF CYSTS IN CASES FROM CANADA AND THE UNITED STATES (401 CASES)

Organ	*Lyon (1902) Magath (1940)*	*Since Reports of Magath*	*Total*	*Approximate Percentage of Cases*	
				Canada and United States	*Endemic Areas in Other Countries*
Liver	367	6	373	71.0	73.0
Lungs	33	4	37	7.0	10.0
Spleen	18	..	18	3.5	2.0
Kidney	14	5	19	3.5	3.0
Central nervous system	7	..	7	1.5	2.0
Peritoneum	54*	..	54	....	....
Bladder	8	..	8	....	....
Pleura	9	1	10	....	....
Miscellaneous	54	3	57	....	....
Total	564	19	583	86.5	90.0

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* Some of these undoubtedly arose from the liver.

trate in these states, but how generally they have scattered is shown by the fact that reports have come from 6 provinces in Canada and from 31 states and the District of Columbia in the United States.

It is of particular interest to know that, of the 65 cases reported from Manitoba, 57 occurred in the decade beginning in 1892, and developed among immigrants from Iceland. In order to study the occurrence of cases by decades, careful attention was given in the case reports to the date of diagnosis, and a study of the duration of symptoms, years of residence in North America, and nativity was made in order to determine the country of origin for the disease. The distribution by decades is shown in Fig. 1, and indicates that there has been a general decline in the number of cases since the decade ending in 1901. Studying the distribution from the standpoint of the country of origin reveals interesting and important information (Fig. 2).

TABLE VI

THE APPARENT RESIDENCE OF PATIENTS IN THE UNITED STATES AND CANADA

State or Province	*Total*	*State or Province*	*Total*
New York	102	Minnesota	18
Manitoba	65	Missouri	16
California	58	Ontario	11
Massachusetts	53	Ohio	10
Pennsylvania	33	Others	107
Illinois	27		
Quebec	19	Total	519

It is unfortunate that in so many reports little or no clue is given to the place of birth and early residence of the patient and that few reports have indicated the extent of the patient's travels. Thus there is no clue to the origin of the disease in almost one-third of the cases. These, however, for the most part were reported prior to 1900, and evidence indicates that the patients were practically all immigrants. It can be surmised with considerable confidence that a large number of these cases occurred in Icelanders, Germans, and Italians. The study of the curves in Fig. 2 shows a striking correlation between the incidence of the disease and the immigration statistics for each country. The great Icelandic immigration, which occurred in and about 1875 during the time when the incidence of hydatid disease was extremely high in Iceland, resulted in a wave of cases in Icelanders in Canada and the United States from 10 to 20 years after the immigration. Since then very few persons have come from Iceland, and in addition the incidence of the disease in Iceland has dropped to an extremely low level. One may therefore expect few, if any, additional cases ever to occur in this country in Icelanders.

The curve for Germany is equally significant. It follows the immigration statistics with a lag of about 20 years. The curves for Greece and Italy indicate that the migration from Italy of large numbers of people preceded that from

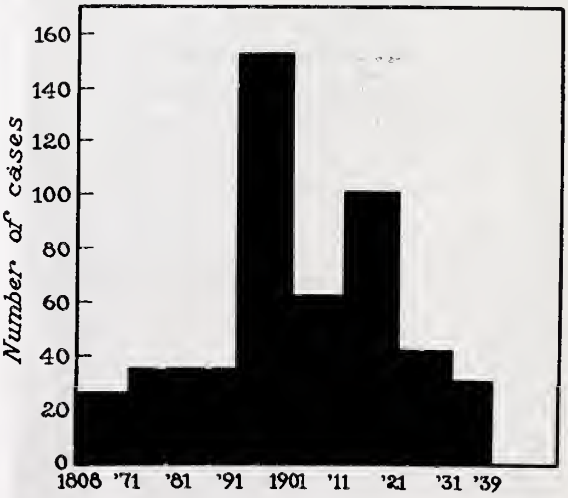

Fig. 1. Distribution of cases by decades. There are 32 undated cases not shown in the chart.

Greece, and this was indeed the case. From the British Isles we have had a fairly steady immigration since earliest times, and the curve is of a flat type. Table VII indicates the countries in which the largest numbers of cases have originated and it can be seen that approximately 60 per cent of the cases have come from Italy, Iceland, Greece, Germany, the British Isles, and Russia.

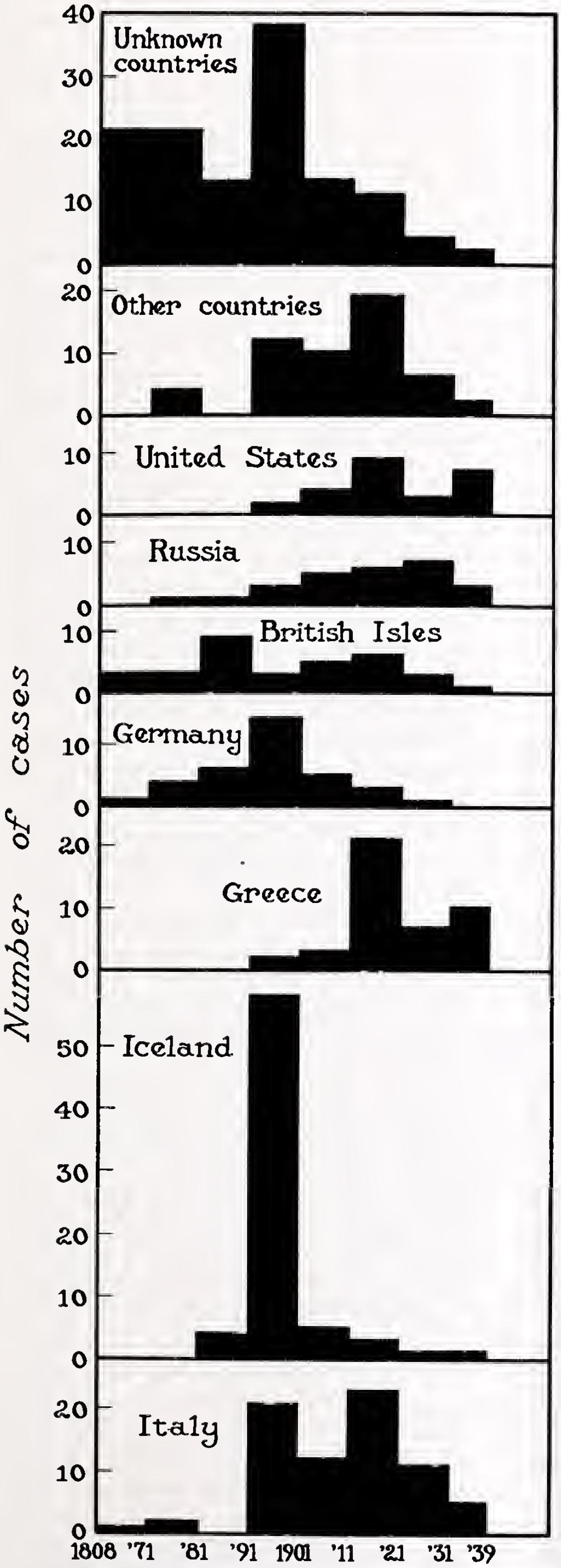

Fig. 2. Distribution of cases by decades and by countries. There are 32 cases not shown in the charts.

In the great bulk of cases reported, the disease was diagnosed between 1892 and 1921, and these dates followed, by the natural incubation period, the great flood of immigrants who came to these shores bringing unseen impedimenta in the form of hydatid disease. The total absence of the disease among persons from Australia and Uruguay and the fact that it afflicted only 2 from New Zealand, only 6 from Argentina, and one from Peru, strikingly attests to the relatively few persons who have come to Canada and the United States from these, the areas of most heavy infection on the globe.

TABLE VII

CASES OF CANADA AND THE UNITED STATES: COUNTRIES IN WHICH INFECTION MOST PROBABLY ORIGINATED

Country	*Total*	*Country*	*Total*
Italy	76	Russia†	26
Iceland	72	United States‡	26
Greece	43	Others	207
Germany	35		
British Isles*	34	Total	519

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* Includes Ireland.

† Refers to those countries now included in U. S. S. R. plus all of Poland.

‡ Includes one patient who had lived in Alaska.

Native Cases

It is evident that most patients have been immigrants, but it is equally evident that persons

TABLE VIII

RESIDENCE OF PATIENTS WHOSE INFECTION APPARENTLY ORIGINATED IN CANADA OR THE UNITED STATES

Province or State	*Cases*	*Years Diagnosed*
Quebec	1	1900
Ontario	1	1919
Manitoba	1	1901
New York	1	1929
Maryland	1	1906
Delaware	1	1934
Virginia	4	1900, 1900, 1914, 1915
Ohio	1	1905
Indiana	1	1922
Illinois	2	1918, 1920
Michigan	1	1921
Minnesota	1	1935
Missouri	1	1914
Mississippi	1	1913
Arkansas	2	1917, 1932
Louisiana	5	1906, 1932, 1935, 1937, 1937
California	4	1902, 1914,* 1925, undated

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* Had lived in Alaska.

Table IX

Occurrence of Cases in Canada and the United States by Years from 1920

Year	*Total Cases*	*Native Cases*
1920	14	1
1921	9	1
1922	6	1
1923	7	..
1924	4	..
1925	5	1
1926	5	..
1927	4	..
1928	4	..
1929	5	1
1930	2	..
1931	2	..
1932	2	2
1933	1	..
1934	5	1
1935	6	2
1936	3	..
1937	7	2
1938	2	..
1939	5	..
Total	98	12

who have never been outside of Canada or the United States have acquired the disease. In Table VIII one may observe 3 cases to have originated in Canada and 26 in the United States. The distribution of native cases by years as compared with the total number of cases since 1920 is listed in Table IX.

There is considerable difficulty in clearly establishing the fact that the disease has been acquired in certain native North Americans because authors have not always clearly indicated the nativity of the patient, and but rarely have indicated whether the patient has traveled in endemic areas and lived there for any length of time. There is, for example, strong indication that at least 2 more native cases should be added to this group, since they occurred in Negroes, but unfortunately they were not clearly enough designated in the list by Lyon. For a more detailed discussion of the difficulties of allocating cases, one may examine the material in my paper of 1940. Suffice it to state that 9 of the 26 native cases were reported by Mills, who recorded them years after they had been seen by other physicians and not by himself. From a more critical examination, however, one may conclude that the disease has been acquired in Maryland, Louisiana, Mississippi, Missouri, Indiana, New York, Arkansas, and Delaware, and probably also in Minnesota, Virginia, and California. There is no evidence, however, to support the contention that native cases are occurring in increasing frequency. Since the first one was recorded in 1900, they have been recorded at a fairly constant rate, and during the past 20 years about one native case has occurred on an average every two years. For the same period, an average of slightly more than 4 cases per year has been recorded in persons who undoubtedly acquired the disease in foreign countries.

The occurrence of the disease in domestic animals is a matter of great concern, but unfortunately it is not possible to obtain sufficient information to learn the exact situation. Salmon's report of 1899 indicated that the cysts occurred in the following ratios: for hogs, 1:24,000; for sheep, 1:60,000; for cattle, 1:1,500,000. The total number of animals thus condemned included 1071 hogs, 279 sheep, and 6 cattle for a 2-year period. In 1924, out of approximately 50,000,000 hogs slaughtered under the jurisdiction of the Federal Meat Inspection Service, 19,360, or 1 in 2500, were infected and 212 sheep of 12,000,000, or 1 in 60,000. For the year ending Jan. 30, 1936, 1 in 513 cattle livers and 21 calf livers were condemned on account of infection. From time to time evidence has supported the belief that hogs in Missouri, Virginia, Louisiana, Tennessee, and Arkansas have been more frequently infected than the general average.

The importance of infection in the domestic animal is based on the knowledge that the definitive host must be available in the United States, and yet there is no evidence to support the notion that dogs are infected in this country. This is in sharp contrast to the 40 to 50 per cent of infection in dogs in Australia and the high incidence in Uruguay, where the disease abounds both in man and in sheep. The importance of the dog in the transmission of the disease cannot be doubted, and the degree of infection of man and of sheep runs parallel to that of the dog in all countries where echinococcus disease is endemic. From the work of Perez-Fontana it is increasingly evident that the infection in the hog also parallels the infection in man. In spite of the low incidence of the infection in man and domestic animals in Canada and the United States, its very existence nevertheless does call for explanation, since the dog in these countries is evidently rarely, if ever, infected.

That the dog is not infected in these countries may be attributable to two important factors: (1) the North American tradition that dogs are not allowed to prey on sheep, and (2) the fact that rarely do dogs have a chance to eat the organs of possibly infected animals, since the major killing of animals for food is in well-regulated slaughterhouses, where the refuse is too valuable to be fed to dogs.

Although it is possible that, as a result of the smallness of the adult tapeworm, it may have been overlooked in the examination of dogs, one must remember that thousands of dogs have been examined in the United States by experienced parasitologists, and failure to find the parasite must indicate its rarity at any rate.

There are reports of other animals in North

America having been infected with echinococcus, and these have included some animals in American zoos, but unfortunately the source of the animals was not stated. In spite of the accurate correlations which have been worked out by Dew and others between the infection among dogs and the number of sheep per human head, and in spite of Dew's emphatic statement that the only source of hydatid disease in man is a dog infected with these tapeworms, one must seek some other explanation for the occurrence of hydatid disease in man and domestic animals in North America, until a sufficient percentage of dogs have been demonstrated to be infected. Evidently in Canada and the United States there are some other factors present which have not as yet been evaluated, for there are in the United States many sheep, and yet few are infected, there being far more hogs than sheep infected. Furthermore, children in the United States do not become infected as they do in foreign endemic areas.

The vastness of the area involved in North America must play an important rôle in limiting contact and hence infection; yet, curiously enough, in the great sheep-raising states the disease has not been reported to affect man.

The observation of Riley that echinococcus cysts are sometimes present in the wild moose of northern Minnesota and that the adult worm is also present in some timber wolves suggests that the life history in North America may be established in wild animals and that hogs and more rarely sheep and cattle, and still more rarely man as an adult, intervene. When dogs are the predominant definitive hosts, sheep and man, especially children, will be the intermediates; when wild carnivores are the hosts, wild herbivora and hogs play the intermediate rôle. It is a reasonable question whether dogs will ever become infected in sufficiently large numbers to prove a menace in North America. So far this has not happened, but it is not too early to begin a program to prevent it.

Just now with the mass migration of various peoples one may suppose that hydatid disease will be spread. North America may expect additional cases, especially if contacts with South America are increased. As long as the disease is confined to man, no danger will result in this country. If dogs and infected animals are excluded, one may expect no fundamental change in the conditions here as a result of martial disasters.

Summary and Conclusions

1. At least 519 cases of hydatid disease have been reported in Canada and the United States since the first case seen in 1808.

2. Ninety-five per cent of the cases in which the nationality of the patient is known have occurred among immigrants, most of whom have come from Iceland, Italy, Germany, Greece, Russia, and Great Britain. Most of these cases have been reported from New York, Manitoba, California, Massachusetts, Pennsylvania, Illinois, Quebec, Missouri, and Minnesota.

3. Infection among these patients has been more frequent in men than in women, but among few children has diagnosis of this disease been made. The organs most commonly involved are the same as those in patients in countries in which the disease is endemic.

4. Evidence supports the notion that there has been a falling incidence of the disease in North America in human beings during the past 20 years. This may be expected to change if the vicissitudes of war and economic unrest change the type of immigration into the United States to people from those countries which are now important endemic areas of hydatid disease.

5. Apparently there have been 29 cases reported from North America in which the individuals were native-born, although it is not entirely certain that the disease was contracted in each instance in North America.

6. Apparently the usual life history between the dog and sheep is not typical in North America, and the suggestion has been made that the life history in this country may be between wild herbivora and carnivora. There is evidence that the infection in hogs is increasing in frequency.

7. A native citizen of North America who has never left the country has hydatid disease so rarely that such an event probably will occur less often than once in several years.

8. Measures should be studied to prevent the increase of this disease in North America and special attention should be given to its frequency in domestic and wild animals.

The Functions and Accomplishments of Your Child Health Committee

FRANCIS T. O'DONNELL, M.D.
Wilkes-Barre, Pa.

YOUR Child Health Committee had its inception as an Emergency Child Health Committee in 1933, during the days of the so-called economic depression, under the able leadership and guidance of Samuel McC. Hamill, M.D. It was organized to safeguard the health of our children during those precarious years with such widespread unemployment. The original work was so well received in most communities and the need of such an organization was so well proven by medical facts that Dr. Hamill urged and succeeded in having your State Society adopt us as a permanent Child Health Committee in 1938.

As an integral part of the State Society, we are directly responsible to the Board of Trustees and the House of Delegates for the conduct of our program. We have pledged ourselves to do nothing to interfere with the private practice of any physician, but on the contrary hope to increase his income through propaganda—educating the public as to the proper medical care of children and to have periodic health examinations and needed immunizations at specified times. Our own work insofar as examinations and immunizations are concerned is limited to the indigent, but our propaganda and education reach all classes.

Our state committee consists of 8 official members and 5 ex officio members. The dental and nursing professions are also represented. It is our aim to have each county medical society in the state have a standing Child Health Committee. To date we have 57 such committees out of 60 organized county societies. To insure local control of our program, the chairman of each component county society is in direct charge of affairs. For this reason our methods differ in various sections. Some counties use the clinic method; in others the children are examined in the physicians' offices. Some counties examine children of all ages, others limit themselves to the preschool age. Some use federal assistance, others use volunteer help. To date 34 counties use federal assistance. We have had as high as 150 federal workers at one time. Any county chairman who feels that he needs assistance may apply to our office. It is possible to obtain clerks, typists, nurses, and social workers, and in some communities nutritionists are available.

It is our fervent desire and plea that each local Child Health Committee will take the initiative to assume medical leadership for all child health and child welfare agencies in their respective communities. In a recent state-wide survey we have found that 61 per cent of the agencies throughout the state have a physician on their board of directors and 64 per cent actually have their program supervised medically, but only 6 per cent are using the County Child Health Committee as an advisory board. Since 61 per cent have physicians on their board of directors and these physicians are no doubt local colleagues and members of the local county society, it should not be too difficult in most sections to have the local Child Health Committee act as an advisory board.

We urge each local county chairman to call an annual meeting of all local agencies and clubs interested in child health. At such a meeting the plans and programs of each agency could be presented and methods devised to promote coordination and prevent duplication. Inadequate medical care and programs could be spotted and methods devised to correct them. An educational program suitable to the community could be devised for the year. Short articles on child health should appear in the local newspapers, bulletins, or be read over the radio. Subjects such as maternal care, infant feeding, vitamins, child psychology, immunizations, and periodic health examinations could be discussed.

Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

Dr. O'Donnell is chairman of the Child Health Committee of The Medical Society of the State of Pennsylvania.

A co-operative health day should be planned consisting of group calisthenics, May Day festivities, baby contest, and perhaps in the evening a free show of medical "movies." Mead Johnson & Company have a number of films suitable for all classes of people. They have at present a splendid "talkie" film entitled "Bobby Goes to School," which every mother who has a child should see, and which every nurse, social worker, or physician interested in children should not miss.

Such annual meetings as suggested would breed community support, co-operation of all interested agencies and clubs, and promote education of the lay public. Community child health consciousness could be born and reared.

The primary purpose of the Child Health Committee has been to promote complete, thorough physical examinations periodically. The American Academy of Pediatrics gives the minimum frequency of periodic health checkups in the different age groups as follows:

Newborn Period:	First week—daily. Second week—tenth to fourteenth day.
Infancy Period:	(2 weeks to 2 years) First year—once a month. Second year—every 3 months.
Preschool Period:	(2 to 6 years) Every 6 months.
School Age Period:	(6 to 18 years) Once a year.

We will have to exert our efforts consistently if we ever hope to have such frequent periodic health examinations up to age 18. In most communities the infancy period is cared for fairly well, as is also the school age from 6 to 14 years. Both the preschool-age and the adolescent child are groups where much work must be done. Our Child Health Committee can do a great deal, but we must have the co-operation of the individual private physician to spread the need of physical checkups for his own private patients. We are hopeful that if our Child Health Committee supplies this need to the indigent, and the family physician can educate and persuade the well-to-do class, the middle class will naturally follow suit.

We are acquainted with a number of physicians who have majored on periodic health examinations for a number of years and today they boast of having a waiting list for patients seeking such physical checkups. In the end it will prove beneficial to all of us to continue this great work inaugurated by your Child Health Committee.

It is with pride we note in the State Journal that there were only 69 deaths from diphtheria during the past year. During the past 7 years your Child Health Committee has immunized 60,000 children, so we feel that we have played no small part in the reduction of diphtheria mortality. However, we note in our state-wide survey that 15 counties report that they are not satisfied with their percentage of diphtheria immunizations and 28 counties report that the Schick test is not used routinely. If we will all do our part, further reduction of the morbidity and mortality rates for diphtheria will be noticed. To this end J. Gibson Logue, M.D., of Williamsport, has been appointed a subchairman of your Child Health Committee to stimulate more immunizations against diphtheria and to promote the routine use of the Schick test. We also aim to promote earlier vaccination against smallpox and the more routine use of the tuberculin test with roentgen ray of all positives and their contacts. Harvey O. Rohrbach, M.D., of Bethlehem, has been asked to take charge of this work.

To date your committee has examined 179,628 children and found 459,861 defects, or almost 3 defects per child; 209,901 of these defects have been corrected, or a percentage of 47.5. We feel very proud of this high percentage of defects corrected. However, much more could be accomplished if we had better co-operation with the dental program and more tonsillectomies performed in the hospitals. The Pennsylvania Dental Society together with the Dental Division of the State Department of Health hopes to give us better results during the coming year, and we are planning to have the nose and throat departments of all the hospitals throughout the state work with us to houseclean as many as possible of the tonsil cases listed for operation during this coming year.

Our new federal project which has been approved in Washington will enlarge the scope of our work. We are now permitted to assist the State Department of Health in the correction of defects of the indigent in the fourth-class school districts. This will stimulate more work in the rural districts where the percentage of defects corrected has been very low.

We are pleased to state that the present personnel of the State Department of Health has been very cordial and co-operative. There will be no fear of state medicine while they are in office. It is encouraging to read 2 quotations of Dr. Shaw's in the current issue of *Pennsylvania's Health* published by the State Health Department: "The private physician is the indispensable Keystone of the Arch representing public health"; also, "In the final analysis it is the individual physician with his routine practice who interprets all the derivable benefits of modern public health for the layman."

Your committee has made overtures to obtain remuneration for the physicians co-operating in this work, but again we have been unsuccessful. You will have to be content at present with knowing you are doing good for those unable to pay, with the added medical experience you gain, with the spread of your popularity in your community, and with the knowledge that you are doing your part to improve community health. We are thankful to any and all who have given us aid in this work, past and present. We continue with the opinion that the indigent children of Pennsylvania deserve all the needed medical advice we can give them.

RIGHTS OF PHYSICIAN AND CORPORATE EMPLOYER TO ENJOIN BOARD OF EXAMINERS FROM REVOKING PHYSICIAN'S LICENSE

Fisch, a physician licensed to practice in Minnesota, agreed with an incorporated social and fraternal organization to render medical services to members of the organization and to their families. Apparently Fisch was paid directly by the organization, but whether on a monthly salary or on a fee basis the reported decision does not state. Without the payment of additional charges other than their membership fees in the organization, members of the organization and their families were entitled to medical services from Fisch. Fisch and the fraternal organization sought to enjoin the board of medical examiners of Minnesota from instituting proceedings to revoke Fisch's license to practice in Minnesota, based on the theory that Fisch was guilty of unprofessional conduct because of his connection with the corporation. The plaintiffs alleged that the threatened action of the board would be an interference with the contractual relationship existing between them. The trial court dismissed the action and the plaintiffs appealed to the Supreme Court of Minnesota.

It is apparent, said the Supreme Court, that what the plaintiffs really seek by this action is a judicial determination that the contract between them is a valid one; in other words, what they actually seek is the equivalent of a declaratory judgment. Since the board of medical examiners is a body organized and existing by virtue of legislative enactment, courts must exercise extreme caution in passing on its actions, especially if what the board proposes to do and what the plaintiffs want enjoined lies within the jurisdictional authority of the board. Unquestionably the Minnesota medical practice act authorizes the board to "suspend or revoke the license of any person guilty of immoral, dishonorable, or unprofessional conduct, but subject to the right of the applicant or licentiate to appeal to the district court in the proper county on the questions of law and fact."

The board has jurisdiction to proceed against any member of the medical profession, and adequate means are afforded on hearings held by the board for the accused physician to make any showing material to the issues made on any charge brought against him. Review from the board's decision is provided, hence the legal remedy is there and obviously is ample. As to the physician, therefore, in the judgment of the court the trial court clearly was right in dismissing the suit.

As to the corporate plaintiff, the fraternal organization, continued the court, it is apparent that its sole desire is to enjoin the board from proceeding against its physician employee. It has no license or right of its own of or concerning which the board has any jurisdiction. It cannot "interfere" with any proceedings that may be brought by the board against the physician employee. By joining their forces the plaintiffs cannot add one whit to their alleged cause. If that could be done, the board in practically every case would be handicapped and perhaps prevented from proceeding against any practitioner, since even a quack would be likely to get some one to join him in an injunction suit.

The Supreme Court accordingly confirmed the order of the trial court dismissing the suit.—*Fisch v. Sivertsen et al., Comprising State Board of Medical Examiners (Minn.), 292 N. W. 758.—J. A. M. A.,* Nov. 30, 1940.

POISON IVY DERMATITIS

An alkaline vanishing cream containing a nonirritant, nonstaining oxidizing agent such as sodium perborate or potassium periodate is now recommended as an effective preventive against poison ivy dermatitis. By incorporating either of these drugs in an ointment and applying it to the skin of the arms and the face before exposure, even those who are previously ascertained to be highly susceptible may be effectively protected. Preliminary tests on a limited number of volunteers with a 10 per cent sodium perborate ointment, to which a poison ivy extract of well-known manufacture representing a concentration 15 times greater than that of the toxin in the fresh leaf was applied, failed to elicit reactions. After satisfactory performance in the laboratory, the prophylactic cream was tested by actual contact and handling of poison ivy foliage. An hour later the cream was washed off with soap and water; reactions did not occur.

The United States Public Health Service, which developed this technic, recommends that vanishing creams containing oxidizing agents such as those referred to be prepared for use at least every 2 weeks to avoid deterioration. They should be rubbed well into the skin of the arms and face before each exposure. Soap and water used to remove the deposit of the powdered oxidant on the skin will emulsify it and wash away whatever toxins are lodged in the pores or on the skin. —*J. A. M. A.,* Sept. 7, 1940.

SOLARIUM SERVES EXPECTANT FATHERS

Sterling Public Hospital, Sterling, Ill., has an expectant fathers' room. The second floor solarium, a cheerful place with plenty of ash trays, magazines, and easy chairs, serves the fathers during their ordeal of waiting.—*Modern Hospital,* December, 1940.

Hypersensitivity to Small Doses of Sulfathiazole

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IN THE early reports on sulfathiazole by Reinhold, Flippin, and Schwartz,[1] by Flippin, Schwartz, and Rose,[2] and by Spink and Hansen[3] it was stated that toxic reactions to sulfathiazole were relatively mild and infrequent. Carroll, Kappel, and Lewis[4] reported that 15 per cent of their patients complained of various symptoms, and that in a considerable portion of this group the drug had to be discontinued. The following cases are reported because they suggest that some of the reactions to sulfathiazole may result from a rapidly developing hypersensitivity:

Case Reports

CASE 1.—Miss A. B., age 47. Sulfathiazole was administered for a mild urinary tract infection, 2 grams daily for 8 days. During the first week there were no unfavorable symptoms. On the eighth day the patient complained of exhaustion, malaise, tremor, and nervousness, which continued for about 24 hours after the sulfathiazole was discontinued.

After a 10-day interval sulfathiazole was again taken, 0.5 gram 3 times daily. On the second day, after 5 tablets had been taken, the patient complained of indigestion, nausea, exhaustion, and malaise. The temperature rose to 102 F., and a widespread eruption, similar to the dermatitis reported by Spink and Hansen, appeared. The following day the fever gradually subsided and the eruption faded. Fatigue, malaise, and digestive discomfort persisted for several days, with diarrhea appearing on the third day.

After an interval of 3 weeks, during which no sulfathiazole was taken, a single 0.5 gram tablet was prescribed as a test dose. One hour after the tablet was taken the patient complained of tightness in the chest, of nausea, and of "feeling strange." An hour later active vomiting set in, followed by chills, backache, and malaise. Within the next few hours the temperature rose to 101. The vomiting persisted for about 10 hours and was followed by active diarrhea lasting an additional 12 hours. The backache and fatigue lasted about 3 days.

CASE 2.—Miss C. D., age 51. Because of a mild urinary tract infection, the patient was given sulfathiazole, 0.5 gram 4 times daily. Although there was no apparent reaction other than a slight feeling of indigestion, this dose was reduced by the patient after 4 or 5 days to 2 tablets daily, and was discontinued after another few days. Three days later a single 0.5 gram tablet of sulfathiazole was taken at 7 p. m. During the evening the patient had a chill with the temperature rising to 102 F. The following day the temperature gradually fell and the patient felt much better. The third morning the temperature was practically normal and the patient felt quite well. At noon another sulfathiazole tablet was taken. This was followed by a severe, prolonged chill with the temperature rising to 105. With this chill, as with the preceding one, the patient complained of nervousness, tremor, and intense generalized aching. The fourth morning the temperature was 102, although by evening it was down to 99.4. The fifth day the temperature was normal and the patient felt much better, although weakness and dizziness persisted for several more days.

CASE 3.— Mrs. E. F., age 65. Sulfathiazole was administered because of a streptococcic pharyngitis, a total of 7 grams being given in small doses. On the eleventh day, because of mild digestive and nervous symptoms, the sulfathiazole was discontinued, even though there was still fever present. Three days later, after 2 days of normal temperature, sulfathiazole was again ordered because of the recurrence of sore throat. After only a single tablet had been taken, chills, nausea, depression, and severe headache developed, with the temperature rising to 100.2 F. The sulfathiazole was replaced by analgesics. Recovery was gradual but uneventful.

CASE 4.—Mr. G. H., age 50. Because of pleurisy secondary to traumatic pneumothorax, sulfathiazole was administered over a period of 6 days in a total dosage of only 9 grams. While there were no definite toxic symptoms, sulfathiazole was discontinued because of its apparent ineffectiveness, and because of the suspicion that it might be contributing to a continued low fever. Five weeks later, after the patient had resumed his duties as an executive, he developed symptoms of a mild respiratory infection. Because of hoarseness and cough, sulfathiazole was taken. A few hours after the first and only dose of 0.5 gram a chill developed, associated with nausea, depression, and severe malaise. The temperature rose to 102 F., but fell to normal with relief from all symptoms within 24 hours.

Comment

Sulfathiazole has been used in a considerable number of other patients with low-grade acute or chronic infection, with apparent benefit, and with no reaction other than occasional very mild digestive disturbances. The sequence of events in the cases reported, however, suggests that a specific hypersensitivity to sulfathiazole may occasionally develop. As to possible conditioning factors, all patients had symptoms suggestive of multiple vitamin deficiencies, and the fourth patient had a definite allergic history.

Apparently the chief lesson to be learned from these cases is that symptoms of intolerance to sulfathiazole should be evaluated carefully. If the early symptoms, particularly in the first 2 patients, had been properly understood, the later severe reactions might have been avoided.

Summary

Four cases are reported which suggest that hypersensitivity may develop even to small doses of sulfathiazole. In each case, after hypersensitivity had developed, the administration of a single 0.5 gram tablet was followed by nervousness, chills, malaise, fever (in one case to 105), and digestive symptoms.

While reactions of this type are apparently infrequent, their early recognition is of importance.

Addendum: Since this paper was submitted for publication, Volini, Levitt, and O'Neil[5] have reported 2 cases which suggest "sensitization induced by the resumption of interrupted medication."

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THE FEDERAL TRADE COMMISSION CLAMPS DOWN ON A PITTSBURGHER

The Federal Trade Commission recently sent to the Journal office a notice of a complaint they had filed against Jane Blanchard Geary, of Pittsburgh. Two weeks later a notice giving the answer to the complaint was sent to the Journal office. These two notices were as follows:

Complaint

Charging misrepresentation in the sale of a medicinal preparation, the Federal Trade Commission issued a complaint against Jane Blanchard Geary, trading as Dr. Jane Blanchard, 2817 East Street (N. S.), Pittsburgh.

According to the complaint, the respondent advertises her product, designated "Dr. Blanchard's Female Compound and Regulator," as a competent and reliable regulator of conditions peculiar to women, and as being safe and harmless.

The complaint charges, however, that the preparation's therapeutic properties are limited to those of an alcoholic stimulant and irritant laxative; that it is not safe and harmless in that it contains the drug aloes in quantities sufficient to be harmful; and that the respondent's advertisements are false because they fail to reveal that use of the preparation under conditions prescribed in the advertisements or under customary conditions may cause colitis and produce pelvic congestion.

Use of the title "Dr." by the respondent is misleading as she is not a doctor of medicine, the complaint alleges.

Twenty days are granted the respondent in which to answer the charges.

Answer to Complaint

Jane Blanchard Geary, trading as Dr. Jane Blanchard, Pittsburgh, Pa., has filed an answer to a complaint issued by the Federal Trade Commission charging misrepresentation in the sale of a medicinal preparation designated "Dr. Blanchard's Female Compound and Regulator."

The answer declares that the respondent sells her preparation only in intrastate commerce, and that the preparation is a competent treatment for ailments for which it is advertised as a cure or remedy.

Answering the allegation that use of the title "Dr." by her is misleading, as she is not a doctor of medicine, the answer states that the respondent received the title of "Doctor" from a school of naturopathic treatment in 1901, and later was advised by Pennsylvania state authorities that she could use the title so long as she did not claim or represent herself to be a doctor of medicine.

Hearings will be held in due course.

MANY CASES DIAGNOSED "FLU" MAY ACTUALLY BE Q FEVER

Some persons in the United States who have had an attack of what appeared to be influenza or of a new and mysterious form of pneumonia may really have been infected with the rickettsia of Q fever, first described in Australia in 1937.

No germ has yet been identified as the cause of these atypical pneumonia cases. A filtrable virus has been suspected but not yet proved to be the cause. The Q fever rickettsia is a filtrable germ that might be mistaken for a filtrable virus without careful tests.

Q fever and the atypical pneumonia are both mild ailments, not often fatal, and without roentgen-ray examination of the patient's chest, either disease might readily be called influenza rather than pneumonia. Neither, of course, is the same as influenza A, which is caused by a known virus.

Patients with Q fever with an atypical pneumonia have fever, rarely any chills, but frequently profuse sweating. They feel ill and exhausted, but do not have the breathing difficulty of typical pneumonia nor as severe body aches and pains as influenza.

"A comparison of the clinical features and physical findings in these cases," the National Institute's report of its Q fever epidemic concludes, "with various series reported from other sections of the United States in the past few years reveals suggestive similarities."

Q fever germs are kept at the National Institute of Health, but none of the persons handling these germs became ill. The 15 patients in the epidemic were working in scattered places throughout the building with no known contact with these germs. There is the possibility that they may have picked up the germs of Q fever outside the laboratory, which would make it more likely that there have been unrecognized cases of Q fever in the United States.—*Science News Letter.*

ROUND-TABLE CONFERENCE ON INDUSTRIAL MEDICINE

The Round-Table Conference on Industrial Medicine was held Oct. 2, 1940, during the Ninetieth Annual Session of The Medical Society of the State of Pennsylvania at Philadelphia. Dr. Charles-Francis Long, Philadelphia, chairman, presided. Those assisting in the conference were Dr. Loyal A. Shoudy, Bethlehem, Dr. Glenn S. Everts, Philadelphia, Dr. T. Lyle Hazlett, Pittsburgh, Dr. Frank Lehman, Bristol, and Dr. Lewis T. Buckman, Wilkes-Barre.

THE CHAIRMAN: The Medical Society of the State of Pennsylvania during this past year has inaugurated a new project, namely, emphasis on industrial hygiene. Industrial medicine has been a growing phase of medical service for many years, and it has been determined within the past year that the State Medical Society should interest itself in this particular branch.

Last fall its Committee on Industrial Health was established with representation in each councilor district, and this is our first formal program to discuss the question of industrial health. This round-table conference will be an effort to persuade the members of this audience to consider the serious part industrial health will play in the medical lives of all of us. Your committee hopes for a healthy worker in every job in this state, full time. In this year of wrath you need only your eyes and ears to inform you of the amount of defense work to be done. How each practicing physician may best function toward this end will be developed by the gentlemen at this table. Let us proceed then to the subject of industrial health. First, we will try to examine its workings and then point out some of its unsuspected ramifications and opportunities.

In order to follow that idea, I will call first on Dr. Loyal A. Shoudy, of Bethlehem, who is one of the pioneers of industrial health, not only in the State of Pennsylvania but in the United States. Probably when I was in my cradle he was doing industrial health work. Dr. Shoudy needs no introduction. He embodies the reason why Bethlehem Steel has such an excellent health record. When the last figures were published, he was responsible for the health of 35,000 employees at a minimum estimate.

Industrial Health in Large Industries

Loyal A. Shoudy, M.D., Bethlehem, Pa.

I do not know just what phase of this work you had in mind for me to discuss. There are so many phases of industrial health that might be discussed after years of experience with its different problems, but I am going to talk about them in a broad way. I will not go into the subject of personnel nor what one should have in the line of equipment.

In considering the health of workers in any large industry, there are many and various problems. One must of necessity know the industry. and also know the hazards and exposures in that industry. Then, the environment wherein a worker spends much of his life must of necessity influence his physical and mental health. Often there are environments other than the industry which play an important part in an individual's life and health.

This industrial health problem is not new. As you will probably recall, Ramazzini reported in the Seventeenth Century on almost every industry of his time and the diseases resulting therefrom. He said that you must know the industry. Also, I say you must know the men.

Next, there should be a study of the plant or yard where a man works. This means the location of the exposures, their control, and the maintenance of this control. It means co-operation with the other departments in order to furnish proper protection for the men and women employed. It means the inspection of your control. It means special studies wherever they are needed. It means the investigation of known causes of disease. It means a study of new processes before they are applied. In the present day and age so many new processes are being developed all the time that before any of them are put into operation in the plant or yard they should first be studied in order to determine whether or not there is anything in them which will be detrimental to an employee's life or health.

I said that you must know the industry. I also say that you must know the men who make up that industry, or women if you choose. But how are you to do this? The first attempt to know the worker is through the physical examination. Some of you may say, "Well, you will have a hard time selling the problem of physical examination to some groups." I agree with you, but I am convinced that if they are told that the physical examination is for their own good as well as for the good of the company you will not have any trouble. The physical examination must not be done carelessly. It should be done very thoroughly. In certain instances this will require more than an ordinary physical examination.

Then, if physical defects are found, the man should be informed of them. If he is not the proper man to do a particular job, he should be told so and be told the reason. He may be just the right man for another job. The physical examination must often be the basis of placement. Some men will argue that they are able to do a certain job. That is for you to decide.

The physical examination provides the opportunity for you to explain to a man what he should do and what he should not do from a health point of view. You are in a position to tell a man who is going on a job in which there is a hazard or exposure that is dangerous that he can do certain things on that job and certain other things he cannot do. If the job is one that requires him to take a bath every day, tell him so and why. If it is a job in which there is a hazard—for instance, the common one of carbon monoxide—tell him how it works and what the results may be. He will probably say that you can't tell him anything about carbon monoxide as he has been working on that job for some time. You can break down that argument by proving to him what carbon monoxide will do and after a short period of time you will have no trouble. By all means, if a man is going to work on any hazardous job, tell him what that exposure means. Then you can point out his defects and tell him what it is necessary to do to keep himself physically fit. You can request him to return for a checkup and insist upon it if necessary. The physical examination offers a wonderful opportunity to get acquainted with the man and to help him. To me the program of health is a most important thing.

Know the industry, know the men, and educate the men. These are the 3 biggest things in any industry, and especially in a large industry. In any large plant the organization should offer all the facilities to determine the causes of ill health and the remedies. In addition to the physical examination, there should be a checkup in all departments. You should clamp down hard on departments in which known exposure exists. Your program must include a study of the working conditions and the occupational needs in relation to health. You must make physical examinations, exercising the judgment of experience in the replacement of workers. If for any mental or physical reason a change in jobs is indicated, this should be explained and a transfer arranged.

There are other ways to put this across. There are times when you can talk on the subject of health to various groups and this furnishes the opportunity to speak of conditions both inside and outside of the plant. Most people are interested in physical well-being and will listen, but it is a little hard to teach them how to live. In any large plant community health and industrial health are closely related. All of the problems that affect an industry are to a large extent the problems which affect that community from a public health standpoint.

In health education the pamphlet idea has been used to a large extent. These can be distributed at a time of the year when you feel they will do the most good. A little leaflet on physical hygiene is very helpful.

As far as the plant is concerned, I believe that every man who is absent from his job because of sickness should clear through the medical department before returning to work, even if he was absent for only one shift. Any of you who have had experience of this kind over a period of years will appreciate what I say, for sometimes you will find a man eager to get back to work who may have been out with pneumonia or a heart condition and 3 days after getting back on the job he may drop over. This check can be made, because it is done in the Bethlehem plant which usually employs from 10,000 to 20,000 men. These men know now that they are expected to clear through the medical department and on Monday mornings there are 25 to 50 of them waiting to be cleared and allowed to go back to work. This program saves many a headache as far as the health is concerned in the protection of the men.

A record should be kept of all illnesses. If any man is off because of sickness, he should report regularly to the medical department for a checkup if he is ambulatory. In this way a record can be kept as to a man's fitness, and the proper time for his return to work will be known. You will be able to help not only the industry but the men, and you will be in a position to discover insidious diseases and advise as to their proper care and treatment. This is especially worth while in the chest, heart, and goiter cases, and also in the cancer cases. You will discover these diseases in some patients who never suspected that they had them.

Some of the problems in industry are the industrial poisons, infections, tuberculosis, anthrax, and tetanus. Give the workers proper protection; provide a good environment, proper temperature and humidity; control any fumes; provide proper showers and water, and study the working time in the places where workers suffer from fatigue. You will have to work with the people who are controlling the accidents.

What of the employer? He can provide good workshops, good plant engineering, washing facilities, good water, and safety in many ways, and also educate the employees in the matter of health control.

What can the employee do, you ask? He can do his part by keeping himself physically fit and in condition to do his job day after day, taking care of his personal hygiene, both of body and mind, keeping the shop clean, and reporting when ill. He can co-operate by obeying the rules in the plant where he works.

There must be some plan for carrying on education, through the medical department, the safety department, and the engineering department, as to the personal health of the worker's body and mind. Mental conditions arising in any plant, especially in the larger ones, demand attention from the standpoint of health education. The real values to be aimed at would be the environment, the personal hygiene, the physical examination, the application of the standards of health to the employees, and the co-operation of all the departments dealing with health matters. Industrial health also includes co-operation with all of the other health organizations of a community—federal, state, city, county, and local medical bodies—because the health of the community will affect the industry also.

As I said before, in any program for industrial health, know the industry, the plant, the processes, and the exposures; know the men and educate them in health matters. It is a hard job, but you must teach the men how to live. You know it is a difficult problem in general practice on the outside. It is equally hard in the plant, but it can be done and it must be done. These are the basic factors of industrial health in any industry.

THE CHAIRMAN: When you pass the Bethlehem Steel plant on the train and marvel at its size, it does not occur to you that there is a medical officer sitting somewhere in that plant who has just told us how his philosophy is carried on inside the walls of that huge factory. He has given us an excellent résumé of industrial health inside large plants.

Now we are going to turn to the philosophy of industrial health inside small plants, and this is the real bottleneck for the medical profession. About 93 per cent of all industry in this state is confined in plants that employ 250 people or less. Only 7 to 8 per cent of the industries of this state employ over 250 people. Most of us when we think of industry think of industrial giants, but Pennsylvania is a state and, curiously enough, the United States is a country, in which generally 92 to 93 per cent of the business firms employ 250 or less people. That is one of our medical opportunities. We have today as a second contributor to our round table a man who, in this city, has been servicing small plants medically. He began this work, I believe, in 1926. It is a great pleasure to introduce to you Dr. Glenn S. Everts, of Philadelphia.

Industrial Health in Small Industries

(Opportunities for Private Practitioners)

Glenn S. Everts, M.D., Philadelphia, Pa.

At the very beginning of this subject I want to state that the most essential point of my remarks is that a small industry can have a medical service, sufficiently adequate to maintain the standards of good industrial health, at a cost not out of proportion to what the larger industries have to pay. An industry of from 100 to 500 employees can be served by a physician in private practice on a definite schedule of from 2 to 6 hours per week, helped by a nurse on a schedule of from 4 to 12 hours or more per week. They will be able to carry on a well-rounded industrial health program, receive pay for their services sufficient to make their efforts worth while, and yet keep the cost per man per year within the average cost of a like service in a large plant.

Those of us who have given thought to the extension of medical service in industry are aware that the weakest link in the chain of providing industrial health to all industry is in the field of the small plant. The figures change with each community, but according to the 1937 U. S. Census of Manufacturers about 60 per cent of our industrial workers are found in plants with a population of 500 or less. There are examples in the larger industrial areas in which a physician gives his full time to industry, serving not one large plant but from 2 to 5 smaller ones. However, because the needs of the smaller plant warrant only a part-time service, it becomes evident that they can best be served by the physician in private practice. It may be a long while coming, but we hope to see the day when even the very small plant can profitably be helped in reducing its lost time from accidents and illnesses and in raising the individual health level of its employees by engaging the part-time service of a nearby private physician especially prepared to do a commendable job of industrial health work. This, we suggest, should be our goal.

The question of how this goal can be reached, I believe, is not clear in the minds of any of us. However, a fair start has been made along the following lines: First, a considerable amount of detailed information is available on medical services in small plants; second, the educational efforts necessary to create a desire on the part of the plant executive for an industrial health service are being carried on with some consistency on several fronts; and third, the machinery potentially is available in some of our larger communities to help prepare the private physician for successful industrial health work in all its phases if and when the opportunity presents itself to engage therein.

It will complete the purpose of my remarks at this meeting to explain a little more fully the content of the foregoing statements.

Because of the fact that the small plant medical service program has become recognized as a problem, data has been compiled by more than a few organizations on the subject. For example, the American Medical Association through its Council on Industrial Health has accumulated plenty of recent information for the physician although it may not yet be ready in printed form. The National Association of Manufacturers' Committee on Healthful Working Conditions has printed data primarily arranged for the information of the plant executive. And one or more of the larger insurance companies have contributed pamphlets on the subject.

Here in Philadelphia it so happens that we have had a unique experience connected with a 7-year demonstration by one of the public health organizations in instituting medical services in smaller industries. We have had the opportunity to initiate the service in some 27 industries and to carry it along for from 6 months to 2 years when various services in turn were turned over to a physician in private practice. Five of these 27 industries now constitute a full-time industrial health job for the writer and their medical services have been in continuous operation from 10 to 14 years. Out of this experience we have assembled some information about the details of a dispensary service such as they relate to the following items: dispensary furniture and equipment, a list of the minimal requirements in the way of instruments, surgical dressings, medications, and sundries; size and layout of a smaller dispensary with consideration for water and lighting facilities; proper location of the dispensary within the plant; estimated cost of construction; scope of the medical service which can be offered to a small plant; dispensary schedules of the physician and nurse according to the size and type of the plant; records of all work sufficiently adequate for comparative analysis; and a list of suggestions relative to the actual beginning of a dispensary service. This information is available to interested physicians.

There is also considerable material available in the form of what might be called a manual for nurses in small industries based upon the needs of a part-time service. Because the nurse in this part-time service arrangement tends to become the administrator of the day's routine and the director of the physician's time when at the plant, I would like to pass along our experience regarding nursing service. We have found that the service of the Visiting Nurse Society of Philadelphia serves most admirably where a part-time, definitely scheduled program is desired. They have done a commendable job in 5 of our plants for the past 8 years. Continuity of service can be depended upon implicitly, for there is always a trained substitute for each regular plant nurse. Schedule arrangements are flexible. The public health training which these nurses receive gives them practical knowledge in the use of all the agencies in the field of medical and social service. And their zest for good work in industry is maintained at a high standard because the national as well as the local organization gives continual attention to their small plant industrial program. They are alive to every phase of good nursing in industry. With respect, therefore, to helping a physician with the physical setup and operation of a small plant medical service, we believe the information and necessary arrangements are easily available, especially in the larger centers.

Persuading the Industrialist

But now, in addition to learning something about the operation of part-time medical services in this demonstration, we gathered some information about the need for educating the executive. We learned how difficult it is to get the executive of a plant to sign on the dotted line when it comes to installing a medical service. "Although the chief executive may be thoroughly alive to the value of health work in industry in general, presumably from what he has read or from the experience of his business confreres, the process of educating him to the value of health work for his own employees and the installation of a dispensary in his own plant becomes a pure sales proposition." This last thought is a quotation from the industrial secretary of the health organization in summarizing his several years' experience attempting to interest small plant executives in industrial health. That was 8 or 10 years ago. For several reasons the picture has changed for the better as we are all aware. Several trade journals now carry articles pointed toward the health of the employee and during 1940, so far, they have printed 4 articles, which we have seen, directed toward the small plant medical service.

The National Association of Manufacturers through its Committee on Healthful Working Conditions has been very active in this field of small plant medical service education. Two sizable pamphlets and several mimeographed memorandums have been circulated among their members who should be interested in the subject. The last thing they have done is to attempt to gather information about the practices and value of the existent medical services from among their membership who already have a medical service. We shall probably see a compilation of this data before long. But one of our own plant executives who has been exposed to some of this literature told us only recently that he doubted if anything he has read would actually influence him to seek an interview relative to instituting a plant medical service if he did not have one already. He felt that the story should be carried to the executive personally by an individual. This may not be typical of the reaction of every plant executive. For a fact we know it is not, but it does give us some idea how much more in the way of intensive education is necessary before the physician and executive actually get together.

Although, in the face of this last comment, it may be the thought of some individuals that the physician himself should act as his own sales agent, it seems to us that this idea should be regarded as unethical if for no better reason than the protection of the standards of acceptable industrial health practice. To do otherwise would be to open the door to the interposition of some lay organization, serviced by the less conscientious physician, who might then become a party to a more or less commercialized form of industrial medical practice.

Rôle of County Society

As the matter now stands it is the advocated procedure of organized medicine to await the request from the plant executive for advice about a plant medical service. Specifically, in the Philadelphia area, if a plant executive has become interested in learning more of the details of a part-time medical service and has recourse to no other advice of his own knowledge, all he needs to do to start getting the proper information is to address a letter to the Committee on Industrial Health of the Philadelphia County Medical Society requesting the same. Every effort will be made by that committee to furnish him with precisely what he wants to know. Machinery for a like service should be available through every county society in the state which is located in a section containing many small plants. It seems to us that in no other way can the extension of industrial medical service be properly controlled while at the same time assuring standards of practice which will be a credit to a successful industrial health program. We do believe, however, that the county medical societies should hold themselves ready to furnish speakers for any group of people sincerely interested in industrial health and that this speaker-service should include material purposefully planned for groups of business men who might be interested in the value of plant medical services.

Preparing the Physician

And now we will take up the matter of helping prepare the physician for a good industrial health job. As a result of our experience with this previously mentioned demonstration of extending medical services to small plants, we learned that more than a few physicians in private practice to whom the service was turned over rather shortly became disinterested for one reason or another, and in due time the medical service was discontinued by the plant and the dispensary abandoned. To my knowledge, all of these who dropped out of the industrial picture are now either moderately, or more than moderately, successful in their private practice. Their attitude may have been justifiable, but it is my belief that several of them were not interested in industrial health beyond its remunerative aspects. They were interested primarily in curative medicine and not in preventive medicine as we would like to see it practiced in industry.

Again we remark that times have changed. Medical service in industry has come into its own. At least it has been accepted into the realm of organized medicine and many of our colleagues who once were reluctant to admit that they gave any time to an industrial practice are now less skeptical about doing so. But it is our contention that the lack of interest in the subject and the reluctance to admit being associated with it has not been the fault of the individual but the fault of circumstances. Most of us are aware of its stumbling evolution from the time it was an unwanted stepchild, not so very long ago, until its recent legal adoption. And most of us here cannot recall having been taught anything about the practice of medicine in industry in our medical curriculum. We believe those two factors alone will help explain most of our earlier misconceptions.

As a consequence of the above factors, therefore, it is probable that the physician in private practice past age 30, or perhaps younger, will profit by whatever opportunity may be afforded him to learn something more of the practice of medicine and preventive health in industry than he already knows, not only about the details of the work itself but something of the spirit and interest which should go along with it if he is to be successful. And if he contemplates taking part in this growing field in an active way, then surely he should come prepared. It is no longer a wishful thought, but has become a cold fact, to say that the successful practice of industrial medicine and preventive health has become a specialty involving information and experience along lines not usually associated with a private practice. The question to be answered, then, is how and where can a physician learn something about the subject.

We wish we were in a position to point to a properly organized and immediate source of information. There are reasons to believe that a postgraduate course in industrial health will be available under the auspices of the Industrial Health Committee of the Philadelphia County Medical Society. Similar activity should be the contemplated program in other county societies. Here in the Philadelphia area it is probable that practical courses can be made available, if the demand warrants, at the University of Pennsylvania. A more immediate source of help for those near Philadelphia can be had by attending the sessions of the newly organized Section on Industrial Health of the Philadelphia County Medical Society which meets on the last Thursday of the month in the Society Building. And, of course, as in every other field of medical practice, there is a sizable volume of literature available devoted specifically to the problems of industrial health, industrial hygiene, and preventive medicine in industry. Furthermore, those of us who may have had some helpful experience in this sort of medical practice will be just as ready to pass it along by personal communication or interview, as any physician would do with respect to his experience in other fields.

Summarizing, then, this brief presentation of the subject of industrial health in small industries, we have endeavored to acquaint you with the fact that a small plant can have an adequate medical service on a part-time basis and that the physician in private practice is the logical one to furnish it. We have also attempted to point out what is being done and what more can still be done to extend that service. And, finally, we have mentioned what detailed experience is available for the creation and early operation of a plant dispensary and why and how the physician should prepare himself to accept such a service—to the end that even the very small plant may enjoy the benefits of a good industrial health program.

The Chairman: I was just about to point out that the logical place to obtain training, if you wish to be a physician inside a large or small industry, or if you wish intelligently to take care of the workers of a large or small industry in outside practice, would be in the medical schools of Pennsylvania. There are 6 medical schools. Two of them have what might be honestly called an undergraduate course of medical instruction. One has a postgraduate course. But the best course in number of hours and subjects is being given now at the Woman's Medical College of Pennsylvania, even though most industrial physicians are men. However, it is my pleasure to introduce to you now the professor of industrial hygiene at the University of Pittsburgh Medical School, whose experience is not only in the teaching field but in the industrial medical working field, since he is also the medical director of the Westinghouse Electric and Manufacturing Company—Dr. T. Lyle Hazlett, of Pittsburgh.

Industrial Health in Relation to Undergraduate and Graduate Medical Education

T. Lyle Hazlett, M.D., Pittsburgh, Pa.

In any presentation of the subject of industrial health in its relation to undergraduate and graduate medical education, one must view the term "industrial health" in a very broad manner, since it implies both intra and extra industrial interest in our working population. We must remember that the average worker spends less than 25 per cent of his time at his industrial occupation. Consequently, the subject of medical education in its application to industry can well be divided into two phases: first, the understanding of working conditions and environment and their relation to the health of the individual workers, which is known as industrial hygiene; second, public health education.

Industrial hygiene is the phase of industrial medicine required by present-day industrial management. This has been brought about largely by the adoption in many states of occupational disease acts. However, in many instances industrial management has found it a paying investment, not only from a production standpoint but also because of its effect on the morale of the entire organization.

Physiologic Effects of Industrial Materials

Until recently very little attention was given to bringing to the undergraduate medical students a realization of the application of medicine in industry. In our present medical school curricula, preventive medicine and hygiene as they are taught are applicable largely to community health, very little to the physiologic effects of various substances used in our industrial processes, some of these with sufficient concentrations and with certain physical properties causing definite health hazards. Industrial health embraces not only the prevention of sickness from a public health viewpoint but it also involves the effects of environmental working conditions. Here we have presented a new field of research as well as for much additional clinical investigation. Not only are we rapidly learning more about the physiologic effects of present industrial materials and processes but we are constantly increasing our knowledge of the many new materials and processes which are continually being developed by our industrial research laboratories.

It has been said that in the next 25 years we shall see unheard-of chemical developments which will materially affect our daily lives. If the physician is to assume his rightful responsibilities in industry, he should be given at least the fundamentals of industrial hygiene and a full knowledge of his responsibility in our present-day industrial relations during his undergraduate years. This, of course, implies a knowledge of industrial organization, the psychology of the employee as well as the employer, and the relation of plant medical procedure to the family physician, community, state, and federal agencies, and the interrelationship of safety and employment personnel.

With such knowledge and understanding a groundwork is laid for the study of environmental factors that should be controlled as well as methods of determination of harmful exposures affecting health. The physician then may be able to make definite recommendations for correction to the management. We know definitely whether a worker is exposed to a harmful lead environment by a quantitative lead urinalysis. In my opinion, the physician should assume this responsibility rather than any other person in an industrial organization. In industrial environments there are atmospheric contaminations from lead, silica, benzol, mercury, solvents, and others which may be so controlled as not to cause any harmful effects. Ventilation, lighting, sanitation, temperature, and humidity are continuously presenting new problems. Fatigue warrants much additional research. We physicians, rather than laymen who are without the proper educational background, should accept the responsibility.

With such a presentation, our graduates will have some idea of the industrial application of medicine. They will be of distinct value to any industrial group, regardless of size; they will not be physicians simply interested in traumatic surgery. The rôle of surgery in industry in relation to the program of preventive medicine has assumed a much lesser place. This is due to intensive accident prevention work in which physicians have played a very small part, largely due to our medical training and the resulting predominant interest being the care of workers after they have become disabled. If selective job placement from physical and mental requirements is to be done, it is necessary for the physician to have an intimate knowledge of the job. Handicapped individuals are often well compensated by their remaining faculties. When this procedure is followed, we shall see a further marked decrease of accidents in industry, which are now laid to carelessness or acts of divine providence, as well as a decrease in the number who are now unemployed.

The Continuation Course

A careful psychologic analysis of any injured individual will often reveal predisposing circumstances that are definitely related to his injury. Consequently, there should be added to present-day medical curricula a course in industrial hygiene, preferably in the senior year. This course would supplement work in preventive medicine and hygiene, which students have received during their previous years, thus giving them an idea of actual application. Rapid development is taking place whereby postgraduate education in this field is being offered by various medical schools. The length of such courses should not be less than one year, with 3 months of this period being devoted to actual experience in an industrial organization. At the end of the year, a graduate degree might be given. A physician having this would have no difficulty in making a most desirable connection either with a single industrial organization or a group. However, shorter courses, now offered, unquestionably will be of great value.

Such a year's work should include fundamentals of engineering, as applied to air-conditioning, ventilation, etc., also a knowledge of the methods of determination of substances used in industry not only in body tissue and excretions but atmospheric contaminations as well. The physician would not do this work himself, but he would be able to interpret properly such findings. Clinical and pathologic studies as well as an advanced training in toxicology with special reference to substances commonly used in industry should also be included in such a course. Many times nontoxic or less toxic materials may be substituted in industrial processes, thus avoiding occupational health hazards.

Additional work in the control of tuberculosis, syphilis, etc., should be included, thereby adding to the conservation of health in industrial communities. In view of our National Defense Program, conserving our man hours in industry by preventing sickness and accidents is of the greatest importance. This is an opportunity for us as physicians and for our medical schools. We shall be derelict in our practice of preventive medicine if we do not provide the necessary training for those about to enter our chosen field, and it will also afford greater inspiration to those of us who have long had the desire to do a better job in this unsettled industrial world of today.

The Chairman: We have looked at the field both large and small. We have heard how additional education can be obtained by the doctor of the future or the older physician who is in general practice—provided he is willing to spend a year in postgraduate work. That is not a feasible possibility for most general practitioners, and yet most industrial health must be taken care of at the present moment by general practitioners.

Dr. Francis F. Borzell, in his inaugural address last night, pointed out that the family physician cannot be removed from any plan of public health, and it has been recently demonstrated that general health is always closely related to the working health of a community.

A member of our Committee on Industrial Health happens to have been a general practitioner in a community which is notable for its industrialism. It gives me great pleasure, therefore, to introduce Dr. Frank Lehman, of Bristol.

The General Practitioner and Industrial Health

Frank Lehman, M.D., Bristol, Pa.

A few months ago, when Dr. Long requested me to write a short paper for your round-table conference on this subject, my first thought was that I should decline. My reason was the fact that my contacts with industrial cases have been limited and my study of the subject, only recently undertaken, has been even more limited. I am here because I accepted membership on this committee with a desire to be of some service to it and must, therefore, take advantage of every opportunity to acquaint myself with the subject at hand. Thereby, I can better use my influence to help to arouse interest among the professional and industrial men of my own community, where I am convinced the subject has received too little attention.

The medical profession of America has built up an organization which has rendered a service both medical and surgical which, judged by morbidity and mortality figures alone, challenges the work done by any similar organization in the world. This was accomplished by individual initiative and the development of the physician-patient personal relationship to its greatest perfection. But in our complacency and self-satisfaction we failed to recognize forces of unrest until they had gained such momentum that today the profession finds itself in a gigantic battle to preserve many of the principles which it deems essential not only to the best interests of the profession but to the health and well-being of all the people.

At the present time the general practitioner of medicine cannot afford to ignore the demand for improved conditions in the medical industrial situation with its allied sociologic aspects.

What has been the attitude of the general practitioner with regard to industrial health? Until very recently it has been largely one of unconcern. He accepted the laws transferring the responsibility for the surgical care of the injured workman to the employer, but his antagonism was aroused when his private patients were forced to go for treatment of injuries to a specially appointed physician or "mill doctor." He passively approved of the occupational disease laws, but again had the same criticism with regard to the method of medical service. In justice to the general practitioner, let it be said that his objections were not entirely selfish. He felt that he had reason to believe that in a legal question involving an injured employee the first interest of such a physician would be the company which employed and paid him. Again, in the early days of workmen's compensation, and even today in small plants, he felt and with good reason that the medical appointment was frequently made on the basis of personal friendship with the management of the plant. With such appointees, industrial medicine was largely a side-line and the industrial work opened up an opportunity for unfair competitive practice. These few examples form a brief background for some of the causes of apprehension and dissatisfaction in the mind of the general practitioner.

What should be, must be, and is coming to be the attitude of the general medical man in regard to the industrial health problem? The concepts of medical practice that we still believe are essential to our best welfare are individual initiative, personal relationship with patients, and honorable competition. But, we recognize that we live in a fast-moving world and, if we are to hold on to these concepts, we must accept the fact that comprehensive medical care is a highly involved problem. The general practitioner realizes that industrial surgery, industrial hygiene, industrial health, and industrial medicine constitute sciences within a science and that special preparation and experience are required adequately to meet and to solve the problems that arise. He who wishes to qualify must prepare himself according to the work which he wishes to do. However, it is well recognized that a large percentage of industrial work is done in small communities and in small plants where an elaborate setup is impractical. It is also quite well recognized that the general practitioner of today is well qualified to care for the vast majority of accident and medical situations that arise in such plants. However, in order that the highest degree of service can be rendered, some arrangement should be made whereby surgical and medical consultation can be quickly secured.

Medico-social Responsibilities

The writer is quite familiar with a situation in which a high-class surgical and medical clinic with hospital facilities is ready at any and all times to render service in such cases efficiently and economically. The satisfaction and success of the program necessarily implies that the general practitioner must recognize his limitations and not presume to treat an industrial case of a nature that he would not treat if it were a private patient. It implies also that he must deal fairly with regard to fees and not charge more than he would charge a private patient for the same service. Failure to live up to these standards has been one cause of failure in the past, but after contact with some very large insurance carriers, and after many years of public relations committee work in our county society, I am convinced that a very high degree of moral responsibility is developing in our physicians and that broader education along medico-social lines will further broaden and deepen this sense of responsibility.

How far do we general practitioners think this setup for industrial medicine should wisely go? We do not think that anyone can fully answer this question now. In conference with a number of physicians with years of experience, I find that we are all agreed that no medical program however extensive or expensive can alone greatly improve the general health of our people until or unless the home conditions—food, clothing, housing, and general domestic conditions—are improved. It has been our personal observation that much domestic infelicity is born of bad or unwholesome living conditions. Our experience is not exhaustive, but we are convinced that these same unfavorable conditions can be responsible for much loss of time from work due to illness, real or imaginary, as well as be the indirect cause of many industrial accidents. This brings us to the question, "Shall industrial medicine enter the home?"

If the domestic phase is so important in industrial health, it cannot be ignored, but it appears to us to be the most ticklish part of the subject. To have a nurse or a physician representing the company enter the home smacks of the corporate practice of medicine. Are we willing to surrender our cherished concept of the importance and the effectiveness of the personal relationship of the physician and his patients? We think not. Is it too much to believe that with time, patience, education, and unselfishness on the part of all, this highly sensitive problem may be solved through co-operation with the general practitioner of medicine? We think not.

THE CHAIRMAN: I am sure that most physicians who are working in industrial health and most general practitioners who are working on health problems outside of the industries would find nothing to quarrel with in Dr. Lehman's paper. The field is really circumscribed for each man and it is part of the work of the committee which is sponsoring this round table to determine the limitations of the various fields.

The general practitioner is very important to the nation at the moment. In industrial work, where less than one-half a day per worker per year is lost from accidents, or six-tenths of a day from industrial disease, that is, from things that actually happen inside the plant, in addition it is generally agreed that 8⁹⁄₁₀ days per worker per year are lost because of ordinary illness, bronchitis, sore throat, grippe, etc. That is where the general practitioner becomes enormously important to the working population. We can figure it this way: Every day of every year about one million people who have jobs are at home sick. That figure is equivalent to the population of a city the size of Cleveland. Now if we could save through the general practitioner just one day per worker per year of that illness, that would mean one million working days saved, and one million working days can build a lot of material that the state may well have great need for.

The last discussant on this program is a man who at the time he accepted an invitation to appear on this program was not the same man that he is today. At that time he was an old schoolmate of mine. We had grown up together, we attended the same school, separated when we went to college, but then came together again at medical school. I invited him here as a specialist to tell us much on the subject of industrial health. However, today I am more than happy to tell you that he is the president-elect of The Medical Society of the State of Pennsylvania—Dr. Lewis T. Buckman, of Wilkes-Barre.

Industrial Health in Relation to the Specialist

Lewis T. Buckman, M.D., Wilkes-Barre, Pa.

I am still that man you knew a long time ago.

It is not my intention to discuss the treatment of injuries and accidents, but to outline the relation of the specialist to the broader principles underlying good industrial hygiene. I will outline the position we of the medical profession should take in the education of the employer, the employee, and ourselves so that, as far as injuries and diseases of the organs of special sense are concerned, Pennsylvania's industry shall be healthier and safer by an improved knowledge and experience on our part in the promotion of the health and safety of the worker. This discussion is limited to the field of the ophthalmologist and otolaryngologist.

Prevention of accidents involving the eyes is more sensible and more satisfactory than treatment. It is my opinion that prevention is the responsibility of the employer, not of ourselves. The adaptation of safety factors to the plant or industry, and the supervision of the worker within the limits of good safety practices, is the job of the safety engineer, of the factory inspectors of the state, and of the insurance carriers. If physicians are interested in industrial hygiene, however, they must know what good safety practices are and how accidents are prevented. It is altogether possible, especially in small industries employing comparatively few workers where expert safety engineers cannot be retained, that the plant physician or specialist in consultation may be called upon for advice in installing and supervising safety measures.

The American Standard Safety Code for the Protection of Heads, Eyes, and Respiratory Organs was issued by the National Bureau of Standards on Nov. 1, 1938, has the approval of the Standards Council of the American Standards Association, and gives a description of protective measures and appliances. The Department of Labor and Industry of this state has published "Regulations for Head and Eye Protection." The Code and the Regulations describe these safety measures in detail.

The Safety Code aims to give the essential qualities of protective devices which are necessary to protect the wearer from the various hazards. The employer is made responsible by law in this state to provide protective devices and to oblige the employee to use goggles, shields, masks, etc.

Success in protection has been increasing yearly in the past two decades. That much remains to be done in education and insistence on good safety practices is amply demonstrated to the interested observer who passes any WPA crew cracking rock in highway construction. The number of goggles worn on the forehead is legion, the number worn properly over the eyes is as infrequent as was the Landon sunflower among these same crews in 1936.

Eyestrain is a factor in inefficient work, in physical exhaustion, in slow and inexact work, and in exposure to danger of the workman and his fellow. Proper lighting of the factory or office has come more and more to be appreciated as a means to health, comfort, good work, greater efficiency, and greater safety. The Illuminating Engineering Society has published a "Recommended Practice of Industrial Lighting." Comprehensive studies have been made of 8 industries, giving authoritative data which form a basis for recommendations for industrial lighting in these and other industries having similar seeing tasks.

Optimum working conditions as determined by illumination depend on diffusion, intensity, glare, and evenness. Uncorrected refractive errors, muscle imbalance, and organic eye diseases are not only the source of poor work, slow work, and spoiled work but also of liability to accidents.

Employers and employees of American industry are losing $50,000,000 a year as the result of preventable eye injuries, and the blind population of the country is being needlessly increased each year as a result of accidental injuries to the eyes. Two hundred thousand eye accidents occur in industry each year, and except for fatal accidents they surpass all others in seriousness and expense.

In Pennsylvania among all accidents 6.5 per cent involve the eye; 0.3 per cent of all accidents result in loss of an eye; 13.7 per cent of all permanent partial disabilities are due to loss of an eye; and among all eye accidents, 6.1 per cent of the eyes are lost. In the past 10 years in this state, compensation in the amount of $6,018,918 has been paid for 2968 cases of loss of an eye, and 124 cases of loss of both.

Every case in which compensation was disputed meant that ophthalmologists were called in to testify to the relation of the accident to the injury and the degree of lost vision as a result. In each case one or more ophthalmologists testifying for the claimant cemented their hold on the affections of that claimant and his family and friends. By necessity the defendant called in his ophthalmologic experts, and in each case these gentlemen in turn lost the respect of the claimant, his family, and friends. This is a practical side of the relation of the specialist to industrial hygiene; a disputed question means two sides, each trying to prove its right. The duty of the profession is to lend its knowledge and opinion in dispute. One side wins, the other loses; and not only are the claimant and defendant parties at interest but just so are the physicians thus involved by remote effect. It would help in many of these disputed cases if exact knowledge were had of the condition of the eyes before employment.

Employers should have the right to and should insist on examination of prospective employees before hiring them. Not alone is it useful in determining the type of work within an industry to which a man is adapted but it is important, in determining the possibility of risk to himself and his fellow workers, to know how much or how well a worker sees. In the anthracite industry our workers do not undergo a physical examination before employment. It is my understanding that the anthracite operators do not want to antagonize the workers, believing that it is better to have their good-will than to insist on physical fitness prior to employment. From two sources I learn that if the section boss thinks a man is a good, loyal worker, that is more important than to know the man is physically capable of employment; that if a boss is good, he knows how to pick his men. From two other sources I learn that there has been opposition by the United Mine Workers to pre-employment examination. This is not the case among the railroad workers, and the good example set by railroads, not only in pre-employment examination but in periodic examination, should be followed by other industries.

It is not an uncommon experience when a mine worker claims injury to an eye or loss of vision, goes to court, and has the unfair advantage in case of a truly false claim against his employer, because the latter has no answer based on previous knowledge of the claimant's eyes obtained at a physical examination prior to employment.

Congenital defects, amblyopia ex anopsia, old antecedent injury, or the effects of old disease of the optic tracts or pathways may be the true answer to the claim for industrial loss of vision due to recent injury, but given the services of a smart lawyer and the advantage of a sympathetic court, with the backing of the union's bureau of claims and the services of a compliant so-called expert, the claimant willfully prosecuting a fraudulent claim or basing his claim on an honest misconception of natural congenital and functional defects, has a decided advantage over the defendant employer who does not even know whether that eye was or was not sound when the man was first employed.

The medical expert professes to testify that such and such is the cause of blindness in the disputed eye; but two persons can readily be obtained to testify, one that the blindness is due to an industrial accident, the other that it antedated the supposed injury. Under these circumstances the opposed ophthalmologic experts are in as much disrepute as the highly paid psychiatrists on opposing sides in a notorious criminal action. For our own protection and the maintenance of our own professional self-respect, we should agitate with the employer for the right of the pre-employment physical examination and the duty of the applicant for the job to subject himself to such examination.

What is said of defective vision in relation to safety among fellow workers is as true when said of deafness. There must be occupations in which deafness not only endangers the worker himself but his fellow workmen. Not only that, but in the event of injury to the head, the question arises whether the injury has caused the loss of hearing that is claimed. How much more simple and satisfactory for the employer to have a pre-employment record of that individual's hearing range!

It is the otologist's job to determine whether the degree of serviceable hearing in any one workman is sufficient to assure safety for the man and his fellow workmen in any particular job. The deafened individual is not necessarily deprived of the right of a job by his hearing defect. Whether he can do the work depends on his employer's judgment. Whether he can do it with safety to himself and others depends on the employer's or safety engineer's judgment based on the report and opinion of the otologist.

Loss of hearing may be claimed and compensation established as a result of some hazards in employment, such as exposure to constant excessive noise or toxic substances inhaled or ingested. Acute trauma can damage the temporal bone in any part; in the mining industry one may see otitis media resulting from blasts or concussions, extending on occasion into the mastoid process to produce mastoiditis.

One of the most difficult otologic problems is to evaluate how much foundation in fact there is in the constant complaint of posttraumatic dizziness.

Functional tests of the kinetic-static labyrinth may offer light on such problems. The subject has no control over the responses to stimulation of the internal ear. A claimant for disability from posttraumatic dizziness is entitled to investigation of his equilibratory apparatus by a functional test of his inner ear. Postconcussional vertigo should not be dismissed as psychogenic in origin until it has been checked by neuro-otologic tests.

The rhinolaryngologist is concerned first with the restoration of form, symmetry, and function after fracture of the nose, orbits, and facial bones. Fractures of the skull involving the sinuses presume the need for the rhinologist's attention. The relation of trauma to sinusitis presumes the need for the opinion of the rhinologist, and the sinusitis, the need for his care.

Fracture of the larynx certainly would suggest care by a laryngologist; compression injuries of the trachea also. The bronchoscopist has his place in industrial hygiene, whether in accidental foreign body work or in the diagnosis and therapy of pulmonary disease. The recent tendency to compensate silicosis suggests that in the future the bronchoscopist's observations and opinion may be required in this and other pulmonary affections to complement the opinions of the roentgenologist and the intermist in such problems.

There are questions of economics and ethics involved in the relation of the specialist to industrial hygiene. Some do not want to do this type of work at all, yet no one practicing medicine in an industrial country and in an industrial age can escape some contact with problems involved in industrial occupations and hazards. The specialist is usually retained in the capacity of consultant to the regular factory physician or the surgeon regularly employed by the insurance carrier. This opens the way to solicitation of business, to favoritism in the distribution of spoils, and the opportunity for return of favors. These things must be corrected or industrial practice forever will be under suspicion by the greater part of the medical profession.

It would be well if our State Society Committee on Conservation of Vision were more active in the study of the eye and industry and in the education of the employer and employee. Our Committees on Mental Hygiene and Pediatric Education and our Commissions on Acute Appendicitis Mortality, Maternal Welfare, Cancer, and on the Study of Pneumonia Control would appear to have been more active in the education of the laity and the profession. In only one of the last 5 annual reports of the Committee on Conservation of Vision has any reference been made to industry. Attention to this feature alone should offer opportunity to this committee to glorify itself as much as have these others.

The Chairman: You have listened patiently for almost 2 hours to a delineation of the industrial field, how the general practitioner may obtain the education that is so necessary in industrial medicine, and how the specialist looks at the problem. In other words, you have almost constituted yourselves a section on industrial health, which this society so far does not have. For the remaining period I am sure that the "board of experts" here will be very glad to attempt to answer your questions on industrial health. Will you kindly rise and let us have your name, and the name of the person to whom you wish to address your question?

Dr. Murray B. Ferderber: I will direct this question to both Dr. Everts and Dr. Hazlett. There seems to be a line of cleavage between medicine and hygiene, one being the prevention and the other the after-care. What is to be done in the way of training men for these particular lines? Does it require that a graduate physician or one recently out of his internship shall be trained in surgery? Does it mean that we will produce a line of men who will do nothing but research which affects the manufacturing plant? Or will one physician combine all these virtues?

It looks as if a physician who has charge of a large number of working men should be required to have an original training in surgery, or at least have a good working knowledge of it to handle even a small industry. If that is true, it might be better to have a technically trained man in addition to the industrial hygiene physician. If this plan were followed, what training would be desirable, and what should be the qualifications of such an individual?

The Chairman: The question is: What are the basic requirements for a physician who wishes to consider himself able to undertake industrial health work?

Dr. Hazlett: What I said had to do largely with our medical schools. The physician has had his undergraduate education and his intern training. Then, if he is in practice, there have been a great many opportunities developed in the past 5 years whereby he may take an intensive course of 2 to 6 days along this special line. There is a symposium by the Council on Industrial Health of the American Medical Association, and there is a course at Northwestern University. The American Association of Industrial Physicians and Surgeons, together with the industrial and hygiene engineers, give an intensified 6-day course on just these problems each spring. Practically all of our medical schools are giving short courses in association with a county medical society. We have a week's course at the University of Pittsburgh which has been well received. We also have a Hygiene Foundation course. So I feel that a man who is in general practice at the present time has quite a number of opportunities for obtaining such additional instruction by utilizing these avenues of study.

I do think, however, that we will also have to train so-called specialists in these fields. In Pennsylvania 95 per cent of our graduates have contact with certain of these cases in the first 5 years of their practice. Some of these men will wish to devote their full time to industrial work and will be willing to spend several months in a medical school where they might receive such training. Such physicians should be called in industrial cases just as we call in other specialists in more general practice.

Dr. Everts: I will answer the question by considering the setup of a small plant. We do not have the equipment, the time, nor the setup for surgery. When a patient requires more than minor surgery, we have an arrangement whereby he is referred to one or the other of the hospitals in our vicinity. We do not attempt any major surgery in these small plants.

The question was asked as to what would be the training of a private practitioner who does not have the opportunity to take additional training; what should he know about the practice of medicine in industry outside of what he knows about the practice of medicine privately? In my opinion, he should be fully informed about occupational disease hazards, about record-keeping in addition to the records he keeps in his own office, and about the general atmosphere that is found in a plant. He should also maintain a schedule in a plant that is not a hit and miss affair, but that is very definite. I think this instruction should be available in a postgraduate course in the community at hours that are convenient to the physician.

To expect a private physician who is already out of medical school to turn himself into a hygienist is beside the point. I hope that will come in time, but at present I feel strongly that a private practitioner can take up the practice of industrial medicine and do a good job if he will only utilize the specific help that is available in our communities at the present time.

Dr. Crandall: I should like to know if anyone has had experience with the protective ointments in the prevention or treatment of dermatitis from industrial accidents?

Dr. Shoudy: I am not a dermatologist, and when we encounter such cases we usually consult the skin men. But I would caution against using the so-called protective creams that are labeled 1, 2, and 3. We have found some ointments to be ethical and effective because we know the formulas and that they should be used in certain conditions.

I do not know of any protective creams that can be used where a person has to have his hands continually in water or in any solution. In the case of ordinary paints and oils, we can use any of the better types of protective creams, but I do not know of any that can be used for solvents because they absorb protective creams. That is particularly true of some of the present-day solvents. Some of the creams on the market contain a certain amount of collodion, in which case the cure is worse than the original trouble. The cream has to be taken off with benzine and the condition resulting is worse than if nothing had been used.

PUT THE DOCTOR ON A PAR WITH OTHER DEBTORS

The average run of citizens who take automobiles to a garage for overhauling or repairs do not expect to recover their property until they have paid the mechanic's bill. How different is their attitude toward the doctor's indebtedness!

The doctor is mechanician, engineer, and all around repair man for the ailing human frame, yet he rarely gets paid when his work is done.

According to an editorial some time ago in *America,* the Metropolitan Life Insurance Company made an interesting survey among its millions of policyholders. The survey reports that the average annual payment of the average family to its physician was $140. Only the doctor himself knows when and after what delays this sum was finally paid to him.

The commentator says wisely:

"Now the cost of repairing the human machine engenders one of the most interesting problems of the day. It is a most important factor in the family budget. From very many parts of the country the report has come that, after the bill for medical services has been rendered, the family physician, who floated into the house with healing upon his angelic wings, assumes the menacing part of a Shylock.

"That medical, hospital, and surgical fees do impose a terrific burden upon some families is beyond all question. To many a man working for a salary, the physician's order to go to a hospital for an operation is worse than a decree in bankruptcy. It means, in many instances, the loss of his job, and a period in which bills pile up so high that he must work for the rest of his life to pay them.

"This fact is recognized by the profession. For several years medical, surgical, and hospital committees have been surveying the field, and as they are animated by an honest purpose, we can rely upon an accurate and intelligent diagnosis of a very serious social problem. But it has already become apparent that the reason for many a heavy hospital bill is the fact that the patient and his family have demanded unnecessary, and even luxurious, accommodations and special service. Even when they are sick, some people never lose their ambition to keep up with the family of Jones.

"One aspect of this problem should not be lost sight of. If some physicians demand, and collect, exorbitant fees, others never receive the modest fees which they ask. Every profession has its list of nonpaying clients, but the physicians probably have the longest catalogue. Men who have been snatched from what Mr. Toots would designate the Cold and Silent Tomb are so jubilant that they are quite unable to think of anything so prosaic as a bill for professional services rendered. Besides, now that the crisis is safely passed, they are too busy arranging a trip to Europe.

"Most families have a tale of the Exorbitant Physician. There is such a creature. But there is also the physician who comes home tired out after a long day, to wonder where he can scrape enough money together to meet his office rent. In his behalf, we would urge the obligation, sanctioned by all law, human and Divine, to pay one's debts as promptly as possible."—*Illinois Medical Journal,* February, 1941.

TB PATIENTS UNDER POLICE GUARD—LAW IS INVOKED

Under police guard, 26 men and 10 women are being treated for tuberculosis in a wing of the Philadelphia Hospital for Contagious Diseases. There is a policeman standing at the door day and night to see that they do not run away from the city's beneficence.

These patients are being subjected to compulsory hospitalization under a 30-year-old state law, which for the first time is being invoked in the city's war on tuberculosis.

They were "sentenced" to treatment at the hospital by Judge Charles L. Brown of the Municipal Court. The complainant was the division of tuberculosis of the city department of health.

In each case an agent of the division testified that the defendant repeatedly disobeyed orders to place himself under medical supervision and observe certain hygienic safeguards.—*The NTA Bulletin,* March, 1941.

The Rôle of Papillary Pathology in Renal Calculus Formation

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MEDICINE has long practiced the art of reasoning by analogy the cause of various diseases when the etiology was not understood. It has bravely educated itself to deductive reasoning, and has brilliantly theorized to a clearer understanding the cause and the effect in many a difficult problem. At times it has been startling to realize later how nearly correct was the deduction, and often the theorization has been the guide for actual experimentation which, in turn, has resulted in an accumulation of facts and accurate knowledge. I think of the differentiation of typhus from typhoid by Gerhard (1836) long before bacteriology; of Finlay's association of the mosquito to yellow fever long before Reed's experimentations; of Laënnec's diagnosis of 5 cases of pulmonary tumor decades before the roentgen ray.

And so has medicine dealt with the theoretic origin of kidney stone, though the answer has not been forthcoming. In past papers I have tried to trace the growth of a renal calculus from its existence back to its origin, and thus did our research work approach the problem. It seems that we were quite able to prove these steps, but I am sure that the student was put to a hard task to follow and to assimilate the problem in its entirety. Today I wish to present to you this research in a reverse manner, and to start with the cause and trace certain facts to the effect—a renal calculus.

At the start let us try to agree on certain fundamentals. First, we must realize that a renal calculus plays a dual rôle—one innocent, the other an acute ailment. In one rôle we are frequently in total ignorance of its innocent existence; in the other an actual surgical emergency exists. In one rôle we find in a kidney, by chance, a stone shadow which is producing no symptoms; in the other this shadow is found to have entered the ureter and is producing the acute pain of a renal colic. It is the rare finding of the first rôle and the frequency of the second that has made us think of the latter alone. We have been turned aside from the true beginning of a calculus to reasoning that its origin was closely associated with this acute clinical state of renal colic.

We will all agree that stone must have an origin, and as such it must be almost microscopic. We will all agree that in its earliest months of existence it probably causes no symptoms. We will all agree that its growth must be extremely slow. We will all agree that it must be stationary. We will all agree that practically all stones are made of one of the common urinary salts. We will all agree that these salts undergo crystallization and, by such, make a stone. We will all agree to having seen stone in the absence of infection, in the absence of vitamin A deficiency, in the absence of parathyroid hyperfunction, and in the absence of demonstrable obstruction. Therefore, are we not ready to admit that, while certain of these factors may play certain parts, none of the aforesaid theories is basically responsible for a stone's origin?

One thing further is necessary that we must agree upon: Is stone a disease entity, or is it a symptom of some precalculous lesion? Let us answer this by thinking how one would experimentally make a stone grow in any part of the urinary tract. Only one thing is necessary, and that is a nidus on which some one of the urinary salts would crystallize. Infection is not necessary, but would heighten the procedure. Hypovitaminosis A and hyperparathyroidism likewise would aid only in rendering a urine more likely to deposit certain crystals. But the sine qua non is a nidus, and this nidus must precede in its existence any crystallization. This, therefore, makes renal stone secondary to something that preceded the deposition of the first crystal, and stone becomes only a symptom of this precalculous lesion.

In order that we might observe the possible

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occurrence of such a precalculous lesion, we turned some years ago to human necropsy material and changed but one thing in the usual routine of such examinations. We opened the renal pelvis first and exposed each minor calix and its enclosed papilla from this approach. Our series of necropsies now number 1154, and of course the kidneys examined double that number. From this source we can now report the finding of a new pathologic condition occurring in the renal papilla in 19.6 per cent of this necropsy material. This pathologic condition has been proved to be a deposit of calcium salts (phosphate, carbonate, and an unidentified salt) occurring as, what one would call, an innocent deposition in the papilla—innocent when intrapapillary, as it frequently was found, and probably only an evidence of repair to previous tissue insult or injury. As such, this is in complete accord with similar manifestations of calcium salt deposition seen elsewhere in the body and under similar conditions of tissue insult and repair.

In this same series of necropsies 65 individuals were observed (5.6 per cent) where visible calculi were found definitely adherent to a renal papilla.

Can we relate these 2 observed facts to one another as cause and effect? It has now been possible to reconstruct this relationship, for while the vast majority of papillary calcium salt deposits have been found to be intrapapillary and innocent of further pathologic change, some have been found so near the surface of the papilla that, under pressure from increasing deposits, the covering epithelium has been lost, leaving the calcium salt plaque partly uncovered and bathed in caliceal urine. Here, then, is seen the perfect nidus—fixed to tissue, composed of mineral salts, and bathed in the salt-containing urine.

It is our privilege to show, through lantern slides, the proof that calcium phosphate, calcium oxalate, and uric acid calculi have each been demonstrated to have such an origin. It is also our privilege to try to bring home the realization that with this proof also comes the explanation of how stone originates, how it remains static while attaining growth, how stone must now be considered only a symptom of a previous pathologic lesion of the renal papilla, and how the known variations in the salts recognized as forming kidney calculi can and do arise from a common origin.

ABSTRACT OF DISCUSSION

Samuel Harris Johnson, III (Pittsburgh): There are several points in this most meticulous presentation that I desire to accentuate. This study of renal pathologic processes places emphasis on the initiation of the formation of calculus rather than on the end result of calculus in the kidney. It brings to our realization the fact that stone is only the epilogue while some deep-seated trouble, most probably remote from the scene, is the prologue. That this deep-seated trouble is a focus of infection liberating bacterial toxins which cause the initial damage to the excretory mechanism of the kidney, and in particular the collecting tubules, has been shown to be most likely. It is interesting to note that Dr. Randall has found evidences of infection at the site of the calcareous plaques in only 2 instances, while Edward C. Rosenow, Jr., found bacteria in histologic sections in 64.9 per cent of cases with renal papillary calcification, in which bacterial stains were done, in a study otherwise confirming Dr. Randall's work. As he states that they were difficult of identification and suggested special stains, I believe that this phase deserves further investigation.

In respect to diagnosis and treatment, the study adds little to our knowledge except that the stones are adherent to the papillae, explaining the latent, quiescent period of growth that may be quite prolonged, and palliation can be in order until such a calculus starts to migrate and create an acute surgical status.

Certain preventive and palliative measures can well be reiterated now with a firmer basis of reason: (1) Eradication of foci of infection. Of major import is dental sepsis; suppurative and inflammatory disease of the anus, rectum, and colon have been shown by Turell to bear a relationship to urolithiasis, prostatitis, cervicitis, tonsillitis, and sinusitis. In dealing with foci of infection, one should remember Solis-Cohen's recommendation "to make sure that the bacterial focus, as well as the diseased tissue, is removed, because as long as infecting germs are permitted to remain, a cure of the secondary infection they are producing cannot be expected." (2) A high water intake—this is to dilute the bacterial toxins and prevent their greater concentration, and to make less likely the precipitation of urinary salts from a supersaturated solution. (3) Relief of constipation, control of intestinal bacterial putrefaction, and moderation in food. (4) Eradication of urinary tract infection with the chemotherapeutic means at our disposal. (5) In view of Dr. Randall's study, the emphasis on vitamin A therapy is quite overdone. It might also be mentioned that vitamin D therapy and acidification in the face of frank infection and high urinary calcium excretion have been shown to be harmful.

This work by Dr. Randall, covering 11 years of clear, logical thinking and research, is truly one of the milestones in the history of the progress of urology and has led us close to the basic etiology of primary renal stone—to the genetic factor, the raison d'être of a symptom, which has until recently been considered a disease entity in itself.

Dr. Randall (in closing): I want to pay homage and give thanks to the men who have collaborated with me in this research. They are almost too numerous to mention, but I think everyone realizes that in a problem such as this it takes many minds and many hours of effort to study and correlate the various phases. Dr. Melvin and Dr. Johnson as resident urologists, with Dr. Leberman of the assistant staff, have been responsible for studying the largest number of postmortem cases. Dr. Lucké, of the Department of Pathology, University of Pennsylvania, and Dr. Eiman, pathologist to the Abington Memorial Hospital, have been untiring in aiding me in the pathologic work. Perhaps one of my greatest debts is due Mrs. Stabler for her interest, ability, and section-cutting, for this material is extremely difficult to handle.

Dr. Johnson mentioned the corroborating work of Dr. Rosenow and the report which he has made of finding bacteria present in as high a number as 64.9 per cent in the sections of his set of plaques. Finding bacteria present in postmortem material does not make a stone, nor does it make one positive that such bacteria constitute even an etiologic factor. I still cannot commit myself to feeling that infection is necessary as a factor in producing either the plaque or the stone. Not only is it contrary to our tissue studies but it is likewise contrary to our clinical observation of cases which have been cultured at the time of stone removal, in which series we found 52 per cent with positive cultures and 48 per cent with negative cultures.

We have done 3 experimental studies in an effort to prove (1) that hyperparathyroidism was related to plaque and stone formation, (2) that avitaminosis played a similar rôle, and (3) that infection entered the picture. I will not give the results of these 3 studies, as they have all been reported, but in summary I can say that they are most inconclusive. While bacteria themselves cannot be shown to be the cause of stone, their toxins have been shown to cause renal damage, especially in the collecting tubules, and I believe this is nearer to the answer than anything else. From this damage, and its repair with calcification taking place in the tissue, we see reproduced an end result so common throughout the body; and while we have not reproduced plaques as yet by this method, I am still hopeful of being able to do so shortly.

MENTAL HYGIENE AIMS OF THE U. S. PUBLIC HEALTH SERVICE

"Health officers should be concerned with the quality of life as well as the quantity of life," Passed Assistant Surgeon Victor H. Vogel of the United States Public Health Service said today. "The capacity to live productively and happily is the biggest problem yet remaining in the public health field." (Public Health Reports, Vol. 56, No. 1.)

"Over $200,000,000 a year is spent to care for more than 600,000 persons in institutions for mental cases. New cases are being admitted at the rate of about 120,000 a year. States are struggling in an effort to provide beds for this tide of admissions."

Through the activities of the National Committee for Mental Hygiene, organized in 1909, and others, a number of mental hygiene clinics have been established, but no organization big enough and with sufficient resources has taken the responsibility for rendering an adequate service. Psychiatric clinics can rescue some from this stream of committed persons. It is estimated every admission to a state hospital costs the community $7000. Only 3 commitments prevented or cases treated successfully outside of an institution would be necessary to save the annual budget of a mental hygiene clinic.

"Persons who will never be able to stand alone may be kept on the job, self-supporting, and relatively happy by mental hygiene guidance," Dr. Vogel pointed out. "Is it not more important to assist in a lifelong productive adjustment of an individual than merely to prolong his life without regard to the type of living experienced?"

Mental hygiene endeavors aim for (1) preventive work or "positive" aspects, dealing with long-range general efforts to better environment, heredity, training, and educative processes; and (2) the establishment of psychiatric clinical services in child guidance problems, for "the child of today is the inmate of tomorrow," and neurotic or mentally ill adults, together with consultive service for physicians.

The Public Health Service proposes 2 specific primary steps in organizing a mental hygiene program:

1. The establishment of a division or department of mental hygiene or mental health, headed by a full-time psychiatrist of special qualifications, in each state. This department should be either part of or in close cooperation with the state health department, except in states where a well-established mental hygiene program already exists independently or in some other department of the state government.

2. Organization of a mental hygiene or psychiatric clinic in every community, county, or city which now has a health department.

PHYSICIANS MUST WATCH

In company with commentators and columnists of all shades of opinion, physicians are wondering what direction the third term will take.

According to most, the direction will be far different from that of the second term, just as the second term was different from the first.

The special interest of physicians lies, of course, in possibilities for expanding the Social Security Act and particularly for early passage of a new national health program.

Current Washington comment is unanimous in the belief that this time the administration is prepared to enter upon a world stage. In the years just ahead the power and influence of the United States is to be directed toward a hemisphere New Deal, and domestic reform, according to this opinion, plays very little part in any planning now under way:

"More inside attention is being given to a nod of approval by the Emperor of Japan," says the *United States News,* "or to a statement by America's ambassador, Joseph Grew, than is being given to broadening Social Security legislation for creating health insurance or for injecting more reform taxation into taxation policies at home."

The danger to American forms of medical practice obviously lie not so much by way of pending legislation but in the sweeping regulations that may be made ostensibly to speed and strengthen national defense.

Physicians who are doing their utmost to aid the National Defense program must also watch closely to see that an exclusively military program does not almost insensibly become a domestic reform program carrying with it the worst aspects of government medicine for the civilian population.—*Minnesota Medicine.*

The Present Interpretation of Otosclerosis and Its Practical Relations

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THE purpose of this paper is neither to add a contribution to otosclerosis pathology nor to defend the intricate technic of the fistulization procedure, but rather to analyze from a practical standpoint the position of this somewhat confused syndrome and discuss its place in progressive deafness and the possibilities of medical and surgical treatment.

This discussion could not benefit experienced leaders in auditory research nor the general medical man who dabbles casually in the monetary phase of otolaryngology. It should stimulate, however, the large group of conscientious clinical otologists throughout this state who recognize the present renaissance in deafness study and are also in position to render valuable field laboratory study on the newer phases of treatment with their loyal clientele of deafened patients.

The confusion between true and false leads in therapeusis is being clarified. Sufficient and reliable statistical material has already accumulated and the otologic battlefield of surgery, biochemistry, and mechanical aids is already staging a major conflict.

To otologists the term otosclerosis has always represented a rather hopeless picture, but several important things have recently happened. First, it has been proved that in the typical otosclerotic ear with bone conduction preserved, hearing is actually present, though locked up. Stand by a fistulization operating table and convince yourself. The problem is only to keep the fistula open.

Second, from the proofs of this and other research, it is increasingly evident that true perceptive or internal ear deafness exists in a far smaller percentage of cases.

Third, recent investigations have presented the challenge that otosclerotic pathology may be reversible.

There still remains the conflicting variation in the acceptance of otosclerosis as an entity.

Between the extremes of diagnosing 70 or 80 per cent of all cases of progressive deafness as otosclerosis and the limitation of the title to only those which conform to the conventional Bezold triad of lengthened bone conduction, negative Rinne, elevation of lower tone limits, with paracusis willisiana, and evidence of active osteoporosis in the pinkish tinge over the promontory, lies a considerable army of intermediate stages of developmental progression in the cartilage before and behind the stapes attachment in the oval window, partial conformation to the Bezold tenets, and baffling admixture of pure conductive and perceptive irregularities.

The doubtful procedure of labeling most cases of progressive deafness otosclerosis may be justified by the pathologic demonstration of an admixture of developing otosclerotic pathology in both adhesive middle ear conditions and internal ear degenerations.

An effort was made during the past year to obtain from a score or more of our leading otologists their personal adherence to the rigidity of the foregoing diagnosis. While it was found that opinion was flexible in regard to the measurements of this condition, considering minor changes in audiometric reading as inconsequential, and the customarily accepted averages in loss of hearing as inaccurate, their adherence to basic and fundamental bone changes in otosclerosis was inflexible and the case total must be limited.

During the past year helpful progress has been made in various parts of the country in the classification of types in progressive deafness, and commencing with the researches of Crowe and his assistants, a limitation has been placed upon perception deafness and the etiology and entity of both pure conductive deafness and otosclerotic change clarified. Here and there

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speakers have boldly described these 3 types of deafness:

1. Conductive, the property of the component parts of the middle ear.
2. The progressive osseous change in the labyrinthine capsule (otosclerosis).
3. Changes in the cochlea and perceptive apparatus, usually degenerative.

The etiology of the first in the nasopharynx and eustachian tube, the second as assigned by Cahill to familial transmission, toxemia, infections, adolescence, and the pregnancy complex, and the third to toxemia, traumatic and neurologic contribution from higher centers has been rather generally accepted.

Rather curiously, we believe that stimulation to this analysis has come from the group working on fenestration of the semicircular canal for the relief of deafness, and perhaps based upon the rather indifferent diagnostic guarantee for such surgery.

Frank reference to many authoritative opinions will be made in this paper and a complete bibliography will be furnished on request.

It remains therefore for this paper, after a review of opinions, to discuss the balance of help to deafened ears from the various means at hand, which include:

1. Every kind of mechanical hearing appliance.
2. Biochemic readjustment and dietary régime.
3. Adequate research, study of newer agents, such as thyroxin, prostigmin, estrogenic substances, endocrines, and vitamin reactions.
4. The surgical management of fistulization by fenestration after the Sourdille-Holmgren and Lempert methods, or modifications of these, and the principles of closure of the round window so well demonstrated by Hughson.

The name otosclerosis originally implied a hardened tympanic membrane, but since the day that term was coined volumes of research, both in the pathologic laboratory and in the clinical field, have poured forth, so that in the present day our interpretation has completely changed, both in theory and in practical consideration. It is a well-established and accepted fact that the fundamental pathologic process starts in the labyrinthine capsule and most frequently in an area which has recently come into prominence by the efforts of Anson, Bast, Wilson, and others—the fissula ante fenestrum. This is a minute channel, found only in man, filled with connective tissue with a rim of cartilage surrounded by the bone of the otic capsule. Masses of cartilage have been seen in this area by microscopic study at an age when the entire otic capsule was ossified. This cartilage later changes to atypical osseous tissue. This is spongy in appearance with hollow spaces and is not a simple transition but projects over the old tissue in tumor fashion. These areas frequently occur where the fissula extends toward the stapes joint, finally producing a fixed or immobile stapes with the resultant conductive deafness.

The typical pathology has been studied by such prominent observers as Nager, Wittmaack, and Fraser. The former reports that these otosclerotic changes are usually limited to the labyrinthine capsule and stapes base, but in some cases are quite extensive, filling the scala tympani and in rare instances the semicircular canals. To get to the explanation of otosclerosis, it is important to make a complete study of the bone pathology. This disease entity has been observed among all civilized peoples and whether its origin is hereditary or dates from some extinct human race is not yet known. In a group of 1146 cases studied by Nager, it was found that the disease began in 50 per cent between the ages of 16 and 30 years. In 14 per cent of the patients observed the onset was noted prior to the sixteenth year.

It has been demonstrated by motion pictures of the tympanic membrane that in certain cases of otosclerosis the mobility of the malleus was practically suspended, which might be due to otosclerotic change in the malleo-incudal joint.

Wittmaack feels that the otosclerotic disease process might be a limited osteodystrophic fibrosis. Others have expressed the view that a distinct relationship exists between this peculiar process and Paget's, von Recklinghausen's, and other bony dystrophies.

Guggenheim and Isaac Jones, on the other hand, consider otosclerosis as a localized entity and not a localized manifestation of a systemic disease. They point out that the regression theory is the most logical—that otosclerosis is hereditary and with selective action on certain parts of the ear—an attempt of nature to obliterate a structure whose evolution is recent. In this disease there is not only new bone formation but a varying degree of degeneration of the eighth nerve is present. Dystrophic bone is permitted to increase because of the resorption of calcium and phosphorus from the normal capsule around the otosclerotic focus.

The etiology of this specific bone pathology is not known. Various authors have propounded theories which deal with both hereditary and environmental factors. The more recent investigators are favoring the latter. Much research has been done on the endocrine glands and their relationship to deafness and otosclerosis.

Dystrophic bone constituting the otosclerotic focus is laid down during the fetal period and later subjected to the same stimuli from the thyroid and pituitary hormones that all bone receives.

Pregnancy in predisposed persons may precipitate otosclerosis or increase deafness already present. The most important relationship between the endocrine glands and the ears is shown in otosclerosis, for it will be observed that otosclerosis concerns the periods when the genitals attain their maturity and when they atrophy; the affection is aggravated in childbirth and lactation; the process is arrested after the menopause or artificial suppression of the menses and it is in the large majority a female affection.

In Portmann's clinic in the past 10 years a definite influence of the pregnancy hormones on the osseous capsule of the labyrinth has been noted.

There has been demonstrated in Canada in a series of cases of constitutional deafness, by means of cranial skiagrams, evidence of dyspituitary background, that in the females moving toward the hypofunction level and in the males to the hyperfunction level.

After observing 12 cases of loss of hearing following the first or second pregnancy or after the beginning of menstruation, it has been postulated that the parathyroid gland was underactive and precipitated otosclerotic changes around the oval window. The relationship between otosclerosis and pregnancy is so well established in Germany that proposals for sterilization and interruption of pregnancy on the basis of health were made in 122 cases from 1936 to 1938.

Other important environmental factors which have a part to play in the background of otosclerosis are the vitamins, the diet, calcium and phosphorus metabolism, and other phases of body chemistry. In this country and abroad much research is in progress to determine the practical relationship between the vitamins and various forms of deafness. Outstanding exponents of dietary and vitamin therapy for deafness, such as Selfridge and Jarvis, agree that a definite relationship exists but no one has brought forth conclusive evidence that a cure can result from metabolic management alone. Selfridge,[1] referring to the vasodilator influence of nicotinic acid, has accumulated some evidence "that this vasodilator effect not only influences the eighth nerve but appears to play a part in removing calcium in the adhesions around the footplate of the stapes in chronic progressive deafness and perhaps also in early cases of beginning bony fixation in true otosclerosis."

In a small series of otosclerotics injected with vitamin C in concentrated form there has been improvement of the tinnitus but no change in the hearing. Many authors feel that vitamin D has a specific action on calcium fixation. The lack of adequate amounts of vitamin D disturbs the calcium-phosphorus equilibrium, resulting in diminished phosphorus absorption. Phosphatemia follows with the abnormal proliferation of cartilaginous tissue or bone microscopically comparable to that seen in otosclerosis. Animal studies by Mellanby in vitamin A deficiency demonstrated definite changes in the eighth nerve and bony walls of the internal ear.

Isaac Jones[2] recently made a study of the vitamins in relation to the ear, nose, and throat, reviewing carefully the opinions in the literature on deficiency factors in each. In his summary he stated that "each vitamin has a preponderant effect on the special structures derived from the ectoderm, mesoderm, and endoderm, * * * * but we cannot expect to improve the hearing by regeneration of the eighth nerve unless the sensory apparatus in the internal ear is viable, * * * * and the defense mechanism of all tissues requires the presence of an adequate amount of vitamins."

Covell has found that vitamin A deficiency in rats is associated with middle ear infections, increase in the periosteal layer of the otic capsule, exostoses in the internal auditory canal, and degeneration of the parts of the organ of Corti. These same changes have been noted in deficiency of vitamins C and D. The muscles of the middle ear have fibrous replacement when the animal is lacking in vitamin E intake as well as hemorrhagic changes about the nerve in the modiolus.

Chronic progressive deafness, as it is understood by most otologists, may or may not be related to otosclerosis. Certainly the clinical lines of demarcation are difficult to draw and many outstanding men interested in this subject differ widely in their views. One authority has stated that a positive differential diagnosis between otosclerosis, adhesive deafness, and atrophy of the muscles of the middle ear is not possible during life. Undoubtedly many cases diagnosed as chronic progressive deafness have an otosclerotic element and only the patients with early or late stapes ankylosis are diagnosed as true otosclerosis. There are many reports in the literature of patients who have died from other causes who had definite otosclerotic foci scattered throughout the bony walls of the internal ear but had no hearing loss or labyrinthine symptoms during life. It seems reasonable to postulate that many of the cases of deafness that do not respond to ordinary treatment and do not fit into the classical picture of otosclerosis are probably patients with otosclerotic change producing effect on the eighth nerve or other location of the middle or internal ear and not the stapes area.

Roentgen-ray therapy in deafness has been suggested by several authors, but no reports of marked change in hearing have come to our attention until Crowe and his co-workers discovered a high tone deafness in children which was amenable to radium implantation into the eustachian tube which they found blocked with lymphatic tissue. These applications were made under direct nasopharyngoscopic observation. This procedure produced excellent results in selected cases but has been found to be of no value in chronic middle ear suppuration, otosclerosis, or any form of inner ear or nerve deafness.

Some of the great achievements in the world of modern surgery have been the recent developments in the surgical treatment of deafness. The fistulization of the external semicircular canal, as recently modified by Lempert, has many advocates throughout this country. The production of hearing when the fenestra is made through the bony canal with release of the perilymph is so dramatic that patients frequently become hysterical. The technic involved has many pitfalls and the end results have not been entirely satisfactory. Everyone connected with this work agrees that the problem is principally concerned with keeping the fenestration patent; Holmgren in Sweden has attempted to preserve the fistula by means of radium implantation, mesothorium, platinum wire, skin grafts, gold leaf, and foreign bodies, but with limited end results. The problem seemed nearer solution when it was demonstrated experimentally in the cat and monkey that there was little regeneration of bone when an electrically driven burnishing burr was used to make the window in contrast to the rapid bone regeneration following the use of sharp curets. Guggenheim in a recent article came to the opposite conclusion when he attempted to duplicate Canfield's experiments. Kopetzky suggests that the heat which the burr produced was one of the important elements in long inhibiting the closure of the fistula. Campbell here in Philadelphia has used a gold burnishing burr which deposits gold fragments around the margin of the fenestra.

Walter Hughson has developed a surgical procedure of placing a graft in the round window which he states has no risks and has produced improvement in all frequencies as great as in the fistulization procedure.

The practical relations of our present interpretation of otosclerosis would be best demonstrated in the management of a patient with this disease entity. Most clinicians favor the conservative medical care of these patients after a thorough analysis including air and bone conduction audiograms, a review of their dietary and nutritional background, a search of the upper part of the respiratory tract for evidence of infection or obstruction to middle ear ventilation, a study of their occupation and drug intake, a laboratory investigation particularly for the anemias and syphilis, basal metabolic rate, and other specific tests for vitamin deficiency and mineral salt imbalance, with particular reference to calcium and phosphorus. With this thorough survey one can intelligently approach the problem of medical care of the deaf patient.

Nash recently wrote concerning the negative results obtained with the usual therapy in chronic progressive deafness. Many agree with him and are looking toward these new fields of therapeusis for the treatment of this great group of socially and economically handicapped people.

If serviceable hearing is not obtained with prescribed medical care, then the physician has recourse to one of the surgical procedures, lip reading, or one of the new hearing aids for his patient. The hearing aids are now prescribed by the otologist and the manufacturer makes the hearing device especially for the patient from his audiogram.

Along specific lines of therapy, Guggenheim[3] recently wrote that "the treatment of otosclerosis by means of (1) reversal of halisteresis, and (2) regeneration of the damaged neural mechanism through dietary regulation and the administration of calcium, phosphorus, and vitamins has, after 3 years of experimentation, succeeded in producing improvement in hearing far greater than has any fistula operation thus far reported."

Another author recommends the use of sodium glycerophosphate for intramuscular injection. He has found the best results by using 10 c.c. of a 15 per cent solution and states that it acts on otosclerosis by modifying the calcium and phosphorus metabolism. Belladonna preparations as well as caffeine and theobromine have been quite effective in the treatment of tinnitus associated with otosclerosis. The use of pilocarpine and prostigmin, as well as thyroxin, as injections for the aid of deafness have been rather disappointing to most observers. In properly selected cases the use of 1000 international units of an intranasal spray of estrogenic substances has proven quite effective.

Intramuscular injections of thymus extract in concentrated form in conjunction with calcium administration have been used. On evidence of hypocalcemia, parathyroid extract, calcium, and phosphorus with hypophyseal extract have been administered. The results were quite favorable in a group of otosclerotics. Thyroid gland extract has been used for many years with only occasionally a successful case.

Concentrated vitamin preparations from A to E have been used with success. Vitamin B plays almost a specific rôle in regenerating the eighth nerve and restoring hearing in patients with vitamin deficiency.

Selfridge[4] has used the vitamin B complex, nicotinic acid, nicotinamide, and sodium nicotinate, preferring nicotinic acid, 50 mg. after meals, to thiamin chloride for patients over age 55. He maintained that "the dosage of thiamin chloride is now controlled by urinary tests for B_1." In conclusion he states: "It appears that thiamin chloride was an essential addition to nicotinic acid for the increase in the hearing curve, as shown in the various audiograms of cases submitted. It is evident from the study of all our charts that the greatest improvement comes from the use of nicotinic acid or sodium nicotinate, and only rarely is the greatest improvement due to thiamin chloride rather than nicotinic acid." And finally, "The data submitted suggests strongly that nutritional deficiencies offer the best solution for the degenerative process involving the auditory nerve."

Measures such as suboccipital puncture for release of intralabyrinthine pressure are effective but only temporary. The social and economic handicap placed upon the hard-of-hearing patient should be recognized by the otologist and efforts made to overcome this barrier to normal intercourse. The problems of personality refer to the inevitable sensitiveness which people have toward a hearing apparatus, which does not seem to be properly founded with a similar disregard to false teeth and eyeglasses. There does not seem to be any greater disadvantage in being recognized as seriously hard of hearing than to accommodate one's self to a neat mechanical device which makes conversation pleasing and agreeable. The problem goes beyond the realm of a specialty and into the fields of psychology and psychiatry. If the individual does not adjust properly because of his defect, the otologist should not hesitate to ask for aid in this direction.

Conclusions

1. Otosclerosis and progressive deafness are not synonymous terms—admixture is possible.
2. Fistulization surgery has demonstrated possibilities of hearing recovery in otosclerosis.
3. It is clear that perceptive deafness is often an erroneous diagnosis.
4. The new classification of types of deafness favors understanding and optimism.
5. The trial balance on the vitamins, endocrines, and newer biochemical agents is not yet complete.

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ABSTRACT OF DISCUSSION

KENNETH M. DAY (Pittsburgh): Drs. Babbitt and Silcox have just given a very masterly summary of the present status of our knowledge of otosclerosis. This knowledge is still very limited in spite of intensive research both in this country and abroad. I should like to offer one bit of speculation which might have a possible connection with the problem. Is it not possible that otosclerosis is a natural, evolutionary, retrogressive change of a highly specialized organ due to our living in a noisy machine age where the greatest part of the sounds we hear have no meaning to us and must be ignored? It has been fairly well established that the deafness in otosclerosis is primarily due to fixation of the stapes and to blocking of the oval window. With few exceptions nerve involvement is secondary and largely due to the fact that, with a fixation of the stapes, the individual has no braking mechanism to protect his cochlea against loud, jarring sounds.

The failure of any medical therapy at the present time is indicated by the multiplicity of the forms of treatment advocated. As Dr. Babbitt has stated, the lack of vitamins from A to E are being blamed as causative factors; also dysfunction of the various endocrine glands including the pituitary, thyroid, parathyroid, thymus, and sex glands; also the lack of calcium and phosphorus. Injections of prostigmin were tried in a series of cases in the ear clinic at the University of Pittsburgh with some apparently favorable results. However, just as good results were obtained in a group of controls where sterile salt solution was employed. It is a peculiar feature of the psychology of deafness that after any new type of treatment there is an apparent improvement of hearing due to increased alertness and attention on the part of the individual treated. I cannot quite understand the reasoning behind the use of estrogenic substances for otosclerosis since the lesion usually progresses during pregnancy, a time when there is an enormous increase in the amount of estrogenic substances present in the body.

If dietary and medical therapy as yet offer little hope for otosclerosis, the reverse is true of surgery. The dramatic results from the fistulization operation cannot be denied. I have 2 patients who could barely understand a loud voice a foot from their ears before operation. Now, 3 months postoperatively, they can enjoy the "movies" from the back of the theater. However, surgical fistulization must still be considered as being in the experimental stage and permanent improvement cannot be assured. Overenthusiasm is causing many otologists to attempt the operation without sufficient training and the spending of many hours in the dissecting room. The result is an increasing number of failures and disparagement of the good results obtained by other operators. The Lempert procedure is extremely intricate and involved. It will have to be simplified considerably before it can be safely handled by the average otologist. In many cases the fistula closes after a period of weeks or months and the patient's hearing is no better and often worse than before the operation. Moreover, the operation is decidedly not devoid of danger.

In conclusion, there is a big field for further investigation and research. The continued study of endocrine dysfunction, diet, and vitamin deficiencies may result in a means of arresting or retarding the development of otosclerosis. Further study of the physics and physiology of hearing are definitely indicated. Surgical alleviation of the deafness from otosclerosis opens a new avenue of approach. Further study into the ways of preventing bony regeneration over an artificially created fistula is a great need, and simplification of the present intricate and delicate surgical procedure a necessity.

WARNS PHYSICIANS OF SWINDLING BY PEDDLERS OF NARCOTICS

"From the Bureau of Narcotics in Washington comes a warning from the Commissioner, Mr. H. J. Anslinger, which should be widely disseminated among physicians and their families," *The Journal of the American Medical Association* for Nov. 23 reports. "Illicit traffickers in narcotics have in some instances recently developed a technic with which they were able to swindle either the widows or members of the families of physicians who had recently died. Apparently these peddlers watched the daily papers for the notices of deaths of physicians. Shortly after the publication of such a notice of death the trafficker appeared and represented himself to be 'a narcotic appraiser,' stating that he represented a federal agency and seeking to induce the survivors of the physician to turn over to him whatever narcotics might be found among the effects of the deceased. Thus far attempts have been made only on the families of physicians. It seems probable, however, that a similar attempt might be made in connection with stocks of narcotics held by druggists. Physicians and druggists everywhere should be warned against this type of fraud."

THE WORLD ON THE MARCH

Events of the past year have been of such staggering proportions that no one can yet evaluate them or their probable effect. In the confusion which has ensued, one fact stands out. At no time in the world's history have vast changes taken place with such startling swiftness. We have hardly recovered from the impact of one crisis before another supplants it. It has never been more true that nothing is as dead as yesterday's news. The press, despite its valiant efforts, has been hard put to keep up with developments. As a result, the radio has assumed a new importance as a medium of disseminating news. Day and night broadcasting stations relate the sad plight of our civilization. Many millions of people have listened anxiously to the unfolding of the most tragic drama of our time.

Who would have believed at the beginning of this year that Europe would be devastated; that in rapid succession Denmark, Norway, Holland, Belgium, and France would be ground under the heel of a ruthless conqueror? It would have seemed incredible that a badly battered Britain would be fighting for her existence, and that in our own land there would be vast military preparations for defense. Most unbelievable of all would have been the prediction that our first peacetime draft law would be enacted. But that is the picture as the year comes to a close.

Small wonder that people everywhere are confused and troubled about the future. For it is obvious that no nation, whether or not it becomes involved in the present conflict, can escape unscathed. Dark as the outlook is, there is no reason to abandon hope. On the contrary, these times are a challenge to the courage of free men. As a speaker recently said, forward strides in civilization are usually made in a period of confusion. However, a nation must be strong to take advantage of its opportunities.

What has happened should impress the medical profession with the task before it. This is no time for quibbling, evasion, or indifference. If the profession is to live up to its obligations, it must prepare itself for the inevitable difficulties which are ahead. The first step in this direction is to support and make more effective its official medical organizations. Since individual physicians have little influence, only as a group can they be potent.

This brief recital of the events of 1940 may well be concluded with a plea to the medical profession here and elsewhere. Today the world is on the march. Let us prepare ourselves. "It is later than you think."—*Medical Annals of the District of Columbia.*

WHERE THE DOLLAR GOES

Of every dollar collected by the average American physician from his patients, 40 cents is paid out in the form of rent, secretarial salaries, automobile upkeep, drugs, supplies, equipment, and other professional expenses, according to reports received from 7707 physicians by *Medical Economics.*

The actual amount spent for professional expenses averages $2963 per physician per year. (Annual gross income averages $7365.). As a result of these substantial expenditures, the average private physician has an accumulated investment in professional equipment of $3231.

SYMPOSIUM ON FUNGOUS INFECTIONS

Clinical Aspects of Fungous Infections

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THE clinical manifestations of fungous disease depend for their development on the interaction between the fungi or their products and the allergic skin. The human skin constitutes good culture medium for certain forms of lower plant life. Block, Jadassohn, and Sulzberger have shown that the organism, in growing and reproducing in the devitalized portion of the skin, elaborates an allergen. The epidermis reacts to the allergen as to any external or internal chemical irritant, the degree of reaction depending on the degree of sensitivity of the skin and the type of organism.

The reaction to fungi of animal origin is apt to be more intense than to those which are the usual cause of human fungous infection. Heat and moisture make the skin especially favorable to the spread of certain types of dermatomycosis and account for their increased prevalence during the summer. People who perspire a great deal are more likely to suffer from fungous infection, and certain recent studies have demonstrated that persons who excrete an excess of sugar in the sweat are more prone to develop dermatomycosis. Diabetic patients, especially women, tend to develop fungous infections about the genitalia. Since the clinical reaction depends upon the degree of sensitivity of the tissues, it may range from an acute erythematovesicular dermatitis to the subacute, less exudative, and less inflammatory reaction down to the chronic manifestations with thickening, scaling, and fissuring.

In dermatomycoses, the allergenic substances elaborated by the fungi are frequently disseminated by the lymph and blood streams and may produce skin manifestations in hypersensitive skin areas distant from the original focus. This mechanism gives rise to the "id" eruption, in which living fungi are, as a rule, not demonstrable. They have either been present in the beginning and were destroyed by the local immunologic response before the eruption had developed, or did not themselves reach the skin and merely their products were responsible for the cutaneous manifestations. Peck believes that a large majority of the dermatomycids are due to a dissemination of the products of the fungi.

Just as the clinical picture of mycotic infections varies with the degree of sensitivity, the "id" eruptions may, for the same reason, present an extremely varied appearance. They may be generalized or localized. Clinically, the onset is sometimes accompanied by fever and leukocytosis. The cutaneous manifestations develop chiefly on the trunk and extremities, and Peck describes epidermal, dermal, subcutaneous, and vascular types. Where the epidermis is the site of reaction, the eczematous type of eruption prevails, such as is seen in the vesicular, symmetrical eruption of both palms with the primary focus between the toes. Where the dermis is involved, lichenoid, parakeratotic, and psoriasiform eruptions occur, and also scarlatiniform and morbilliform erythemas. A subcutaneous "id" reaction may simulate an erythema nodosum, and vascular eruptions may show themselves as urticaria or a migrating phlebitis.

The genus Trichophyton may infect skin, nails, and hair in both human beings and animals, and may be transmitted from man to man or from animals to man, and also by such articles as brushes, combs, and towels which may contain spores. It is divided into 2 main groups—endothrix and ectothrix. The former is found almost exclusively in man and grows only within the hair substance, while the latter is of animal origin and not only invades the hair but also proliferates actively on the hairy surface. Ectothrix may be found on horses, cattle, pigs, birds, cats, dogs, and other animals, from which they

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are communicated to man in whom they are apt to cause very inflammatory lesions.

Trichophytosis capitis, or tinea tonsurans, is chiefly a disease of childhood and occurs principally in school children and only occasionally in infants and adults. Most cases are seen between the ages of 5 and 12, and spontaneous cure may occur at the age of puberty, due apparently to certain physicochemical changes which occur in the skin and hair at this age which render the soil less favorable for the growth of fungi. The signs first observed are small, circumscribed, rounded patches upon the scalp, wholly or partially covered with minute, whitish, grayish, or yellowish scales. Sometimes the patches are erythematous and show crusts and follicular pustules. The hairs upon such a patch seem irregularly clipped short, which produces the effect of partial baldness in the involved area. Among them may be found lustreless, dry, long, and fragile hairs which break upon slight traction or flexion. The patches may enlarge or may increase in number until the whole scalp may be involved. Sometimes there is no distinct patch, but isolated hairs or tufts of hair here and there over the entire scalp may exhibit evidence of impairment. Itching of varying severity, though usually mild, is induced by the disease. When the scalp is very generally invaded by the squamous form of the disorder, its appearance is similar to that noted in diffuse seborrhea, chronic eczema, and psoriasis of the scalp, except that the hairs are less pasted to the surface, are more lusterless, friable, and contorted in shape, and much more often are represented by stubble or stumps.

Instead of assuming the dry and squamous type just described, "ringworm" of the scalp may exhibit acute and exudative manifestations, leading to the formation of kerion. This complication was first recognized by Celsus, whose name has since been associated with it. The signs of Celsus' kerion are the occurrence of acute inflammation, usually circumscribed, though occasionally diffuse, in a portion of the scalp, giving rise to a tumor formation which may project to a considerable height above the scalp level. In time the appearance is suggestive of a carbuncle, since from the tumid orifices of numerous distended follicles a viscid, semitransparent, puriform fluid exudes. The hairs loosen and fall. The lesion appears as a flattened, boggy, semiglobular, fluctuating, indolent swelling, its surface congested, reddened, and glazed, with split-pea sized, pustule-like lesions distributed over its surface, or, when these have ruptured, exhibiting gaping follicles from which a gummy secretion is poured. At times a true subcutaneous abscess with sinus formation develops. Pain is a rather constant feature. Kerion runs a chronic course and is usually caused by the ectothrix. Often there is no antecedent history of the usual type of scalp ringworm. In healing, kerion leaves scars.

Trichophytosis of the bearded region, not a very common affection, appears in 2 forms. The superficial type is not unlike trichophytosis corporis and runs a course similar to ringworm of the body. One or several reddish, pea to small-coin-sized rings become visible, with pin-point-sized vesicles, branny scales, and often no other lesion save a hyperemic, scarcely elevated margin. The hairs over the patch become loose, dry, and brittle and, when extracted, the bulb appears large and white, due to adherent detritus. The more frequently encountered variety is a deeper infection and bears a close resemblance to kerion with nodular thickenings and boggy swellings. The skin is congested and reddened, has subepidermic pustules at the orifices of the hair follicles, and is studded irregularly with firm pea to nut-sized papules and tubercles. The nodules are usually aggregated in masses or lumps which involve the skin and subcutaneous tissue. The follicular openings exude a gluey, yellowish, sticky pus that rapidly dries into crusts. These lesions are usually limited to one cheek, or to the cheek and chin, and very rarely cover the entire bearded region. The hairs in the involved area are not as brittle as in tinea tonsurans, but may break off near the skin surface, leaving ragged stumps; or they may spontaneously fall out after being loosened in their follicles. The ease with which epilation may be accomplished without causing pain is a characteristic feature of the disease. The superficial form of tinea barbae is usually due to endothrix, the deep type to ectothrix.

Trichophytosis corporis, or ringworm of the body, displays different signs according to the temperature of the part of the body affected and the various external irritants to which the involved skin may be subjected. There are 2 forms, generally described as the dry and the moist. The dry, or macular, form of the disease is characterized by the occurrence of one or of several pea to large-coin-sized, circumscribed, reddish circles, usually paling under pressure, often at the general level of the skin and occasionally slightly raised above it. The center of the circle may be paler or may even appear to be unaffected, thus transforming the patch into an annular lesion. The patch enlarges by peripheral extension, rarely exceeds 5 or 6 inches in diameter, and is usually characterized at the outer border by slight, whitish, furfuraceous desquamation. This dry form is usually seen upon the exposed surfaces of the body where there is less heat, moisture, and friction than upon other parts. Occasionally, concentric rings are seen, due to recurrence of the disease within the peripheral border. The subjective sensations consist of a mild itching or burning.

The moist form of ringworm of the body is represented by vesicular or pustular lesions. The vesicular lesions may appear at the onset, or they may arise from macular lesions. This type shows central involution of the patch with peripheral extension of a raised, inflammatory border consisting of pin-point-sized, transitory, and superficial vesicles or vesico-papules which rest on a reddened base sometimes extending slightly in advance towards the outlying skin. The early lesions quickly shrivel until they are represented merely by fine whitish scales. The eruption is usually trifling, but in severe forms the evolution of the disease may persist over a period of months.

The papular and rare pustular forms of body ringworm present the same clinical features as the type just described, but represent a more actively developing fungus, to which may be added irritation of the affected part by heat and friction. They are usually seen upon the back, abdomen, intermammary, and inframammary regions, and the inner surfaces of the thighs and arms.

Tinea cruris, usually of symmetrical distribution, occurs on the perineum and inner surfaces of the thighs, but may extend over the groin, upward over the pubes, and backward over the sacrum. It is characterized by extensive exudation in bright patches, with a distinctly defined, raised border showing a sharp contrast with the healthy skin. It is from this feature that it derives the name, eczema marginatum. The disease is aggravated by heat, perspiration, and the friction of apposed surfaces and clothing, and is persistent and remarkably subject to relapse. It is caused by the fungus, Epidermophyton inguinale.

Ringworm of the hands and feet is caused by various species of fungi belonging to both Epidermophyta and Trichophyta. It is found more commonly on the feet than on the hands, and is much more prevalent in warm weather. Whitfield has classified the various clinical manifestations in 3 groups: (1) Acute vesico-bullous, with sudden onset and resembling vesicular eczema or dyshidrosis. (2) Chronic intertriginous, of the toes, secondary to the acute vesicular type, in which there is a whitened, sodden mass of epithelium between the toes. (3) Chronic hyperkeratotic, usually on the feet, in which there are large and irregular masses of overgrown horny layer. The entire plantar surface may be involved, and vesicles and pustules may be seen scattered throughout the area. The essential lesion in all these cases is probably a vesicle which is deeply seated and only slightly elevated, with no surrounding erythema. These vesicles dry up, desquamate, and expose a red, smooth, shiny surface with a collarette of upturned scales; or, instead of desquamating, the roof of the vesicle may produce a hyperkeratosis.

Confluence of vesicles may occur with consequent bullae formation, or grouped vesicles may develop into a dry or moist, well-defined eczematous area. On the hands the eruption may be vesicular, pustular, or squamous. The lesions may be discrete or grouped and occupy the interdigital surfaces of the fingers as well as the palms, and occasionally the dorsal surfaces of the fingers and hands and the wrists are involved. Among subjective symptoms, itching, either moderate or severe, is almost always present, and sensitiveness and pain may occur. Hyperhidrosis is common.

The allergic phytid eruptions occurring in association with Trichophyton infections are usually generalized and are more likely to occur with the deep-seated form of trichophytosis. They are often accompanied by constitutional symptoms such as mild elevation of temperature, lymphadenopathy, and swelling of the spleen. The most common form is the lichenoid trichophytid which appears chiefly on the trunk and extremities and which consists of small, follicular, acuminate or flattened, pale red papules which may be capped with a minute vesicle or pustule; or the surface may be scaly and topped by a horny spine, thus presenting lichen spinulosis. These lesions may be disseminated or grouped and, by confluence, form plaques which may resemble pityriasis rosea, psoriasis, or seborrheic dermatitis. Occasionally the eruption is scarlatiniform or morbilliform, and erythema multiforme and erythema nodosum types have been described. These eruptions usually run a short course, but recurrences are common.

Epidermophytic phytids may be generalized or localized and occur usually with severe and acute attacks of epidermophytosis of the feet. The generalized form is uncommon but, when occurring, is not unlike that due to Trichophyton. The localized form usually involves both hands and is manifested by closely set groups of vesicles in symmetrical distribution, associated with intense pruritus. They may be superficial or deep-seated, and the accompanying inflammatory reaction varies with the degree of sensitivity. Epidermophytids of the hands often closely resemble acute dyshidrosis, from which they are differentiated with difficulty.

Favus, in its human form usually due to the fungus Achorion schönleinii, may affect the scalp, glabrous skin, nails, and in rare instances, the mucous membranes. The chief site of infection is the scalp, where the disease may be recognized by the development of minute, subepidermic, yellowish or reddish puncta, visible at the site of implantation of the hairs. A circle of vesicles may surround these spots, and in the course of about 2 weeks these lesions become covered with friable, circular, and elevated crusts, of a sulphur-yellow color, and with a concave surface. At the center of this umbilication one or several hairs usually make their exit. The hairs may lose their luster, become friable, and may be readily extracted, and the hair follicle becomes atrophied. There is usually a moderate degree of itching present, and adenopathy is often a feature. Favus leaves the scalp surface bald, irregularly atrophied, or disfigured with cicatrices. It is usually chronic in its course and develops slowly, and may last for as long as 15 to 20 years. A significant feature in many cases is the presence of a peculiar mousy odor. Favus of the body surface may resemble ringworm in the production of circular patches, with an active border made up of vesicles or papules which may have the favus scutulum as a center.

The clinical manifestations of onychomycosis may at times be most trivial. A subungual hyperkeratosis may be the only sign apparent. Usually, however, destructive nail changes are present. The nails are thickened, discolored, lusterless, brittle, spongy, grooved, or pitted. There is commonly a paronychial inflammation, and beneath the free margin there is an accumulation of epidermal débris. Due to the friability, there is a breaking of the nail plate at its distal and lateral borders, and erosion of the nail to produce a rough, irregular surface, and the nail may be traversed by grooves or furrows. One nail only, or several, or all of the nails may be involved. The course of the disease is singularly persistent.

Tinea versicolor is characterized by the appearance of finely desquamative macules, usually fawn-colored but, at times, reddish, deep brown, or almost black, occurring particularly on the upper part of the thorax, and also on the neck, abdomen, groin, and flexor surfaces of the arms. Not infrequently the lesions become confluent to form large patches. As a rule there are no subjective symptoms, though mild itching may be present. The condition occurs more commonly in people who perspire freely, regardless of personal cleanliness.

Erythrasma appears as slowly evolving, yellowish-brown or reddish macules, sharply circumscribed, which enlarge by peripheral extension and, by confluence of several lesions, form polycyclic contours. The surface of the lesions shows a fine scaling, and subjective symptoms are practically absent. The site of predilection of this disease is the inner surface of the thighs where the scrotum touches the skin, and it is nearly always limited to the genital or axillary regions. It occurs much more commonly in men than in women.

Moniliasis as a local infection may be divided into Monilia infections of the mucous membranes and of the skin and its appendages. Thrush is probably the best known variety of localized yeast infection. This disease is characterized by the presence of variously sized and shaped grayish-white plaques on the mucous membrane of the tongue, gums, cheeks, lips, and pharynx. The pellicle is easily removed and reveals a bright red, eroded base.

Cutaneous moniliasis appears most commonly as an intertriginous type involving the intergluteal, inguinocrural, submammary, and interdigital folds. The lesions start as vesicles or as erythematous macules which grow by peripheral extension, forming slightly scaling, round or polycyclic, erythematous areas with a well-defined border. A collarette scale is rather typical. This type of involvement occurs fairly commonly in infants as a sequence to oral thrush.

In addition to the conditions just described, monilial infections may involve the genitalia and cause vaginitis and urethritis, and may be responsible for paronychia and onychomycosis as well as for the development of dermatomycids.

Cutaneous blastomycosis begins as a small papule or papulopustule which soon becomes covered with a crust, appearing principally on the face, hands, wrists, or forearms. The lesion grows slowly to form an indolent, flat, elevated plaque with a wart-like surface. A fully developed lesion presents a surface covered by irregular papilliform elevations separated by fissures of varying depth, and a characteristic abruptly sloping border, dark-reddish in color, which is studded with miliary abscesses. The process advances slowly, with irregular periods of activity and progression, often with healing occurring in the central portion with the formation of a soft, pinkish-white, atrophic scar.

Sporotrichosis is a chronic mycotic infection usually appearing on the exposed surfaces and beginning as a small nodule or as a superficial, inflammatory, open, discharging lesion. Later, painful nodules, which gradually enlarge, appear along the course of the lymphatics. These finally become adherent to the skin, assume a reddish tint, soften and break down, discharging a grayish-yellow pus. The course of the lesions is indolent but progressive, and they may become disseminated over various parts of the limbs and trunk. Occasionally, the lesions will heal spontaneously.

Note: The discussion of the papers by Drs. Hegarty and Weidman follows the paper by Dr. Weidman.

The Laboratory Aspects of Fungous Infections

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I AM conscious that it is largely superfluous to discuss this subject now that the splendid text by Lewis and Hopper, *Introduction to Medical Mycology,* has just become available. There remains one justification, however; namely, that I now have the opportunity of emphasizing certain features of mycologic technic which seem to have escaped the attention of dermatologic practitioners; at least, they have not sunk in. Some dermatologists defeat their own ends because they do not observe and practice the proper procedures. I speak in this way because, as the head of a dermatologic laboratory, I have had so many contacts with practitioners in the various specialties and have found that the results of the laboratory examinations frequently are valueless through faults in the material submitted. In other words, the clinician must play his part as well as the laboratory man. Accordingly, since the whole field cannot be adequately covered in 15 minutes, and the practitioner comprises almost the entire audience here, I shall confine myself to those phases that concern him.

Collection of Materials.—The commonest oversight in this connection is the scantiness of the materials collected. Sometimes this is unavoidable, i. e., where the lesion is small, but I am afraid that it is often due to the rush of a busy office practice. The situation is different from that with bacterial infections, where the microorganisms are more uniformly distributed and in swarms throughout the lesion. We should picture mycelium as creeping through a lesion in such a way that in one part it is spreading more vigorously, whereas in another it may have died out. Obviously, then, it does not suffice to confine the sampling to one region. In a case of tinea cruris, for example, the more peripheral part of the lesion should always be selected and there is no reason why the entire periphery should not be scraped. A preliminary cleansing with alcohol may help to prevent contamination of subsequent cultures, when performed, and may assist in drying out the lesion and thus securing the particles more easily.

It is in the interdigital lesions of the toes that collection of materials is particularly important because all of us know how frequently a negative report is returned from a lesion which seems certainly fungous in nature. It is tempting to scrape the conspicuous, cornlike center, but here again the axiom about the peripheral part still holds good. Generally there is a flaky deposit at the margin which can and should always be secured. If the central horny parts are to be examined at all, it is better to lift them out in toto; thereafter, in the laboratory, they can be snipped up into small blocks for purposes of culture, or into slices for direct microscopic examination. Every dermatologist has experienced the difficulty of attempting to look through one of these soft corns in a KOH preparation. Really, there is no necessity for this when thinner materials can be secured at the periphery.

In the case of hairs there is, as a rule, too much haphazard collection of materials. In early, untreated infections there is not any prob-

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From the Laboratory of Dermatologic Research, Medical Laboratories, University of Pennsylvania, Philadelphia.

lem as a rule, because there is an abundance of matted hairs within the scales, and adequate material can then be secured by simply curetting the surface with forceps and then pinching off plenty of material. In old crusted lesions of kerion, the chunks of crust in the center of the lesion may or may not contain appropriate materials; here, again, pay attention to the periphery of the patch where crusts do not becloud the situation. It is in old, treated lesions that special care must be exercised. Here it is imperative that the patch be examined under the hand lens to identify *individual* diseased hairs. Thereafter the individual hair should be extracted while still viewing it under the lens. The usual round-ended, toothed, dissecting forceps are not suitable for this work; it is decidedly worth while to secure a special instrument with a broad, straight end and reserve it for this purpose. I understand that an additional maneuver is practiced on old, long-treated favus on the scalps of immigrants at Ellis Island, where steps have been previously taken by the patient's physician to get the scalp into such shape that it will pass the inspectors. In such cases a rubber sweat cap is maintained on the patient's scalp until the follicles that are infected may become erythematous and thus point out the hairs that are to be extracted for examination. I have had some small successes in applying wet glucose dressings to lesions between the toes for 48 hours or more before taking an additional lot of scrapings. This was done on the theory that the growth of the fungus would be increased, knowing as we do that glucose is an optimum culture ingredient for fungi. Naturally, where lesions have been treated with a fungicide recently, the patient should be given a rest period before attempting a second examination.

In vesicular dermatophytosis of the soles, the roof of the vesicle should be examined in toto, with the underside up. Its removal is readily accomplished by transfixing the roof with a dressmaker's needle; while one hand lifts the roof up as strongly as it will stand, the other uses a pair of small, curved scissors for snipping it off under the needle. This should be done at one snip.

Nails present a real problem, and for this reason samples should be taken from all of the promising parts of the lesion. It is not alone the crumbly, cheesy material under the free end that should be curetted out, but scrapings or thin parings should be taken from the nail plate. A nail file is probably the most useful instrument in all of this work. It is particularly imperative that an abundance of material be secured from this class of cases because so many of the examinations result negatively.

Experience shows that fungus is most readily demonstrated (both microscopically and in culture) in cases of tinea versicolor, tinea circinata, and tinea capitis. But even here it is better to be on the safe side and secure plenty of material. In the case of ringworm of the toes and of the nails, the practitioner should bend over backwards in his effort to secure a large bulk of material. Dr. Hartzell taught me to use small squares of black paper upon which to collect the materials; wrappings of photographic plates serve well, and the materials can be wrapped up and transmitted in them, too. The black background is advantageous when picking out the particles in the laboratory.

In the case of *deep* fungous infections, pus is usually concerned. It is obvious that, if cultures are to be essayed, it is better to aspirate an unopened lesion when possible. This will reduce the likelihood of bacterial contamination.

Transmission of Materials.—The transmission of scrapings between 2 glass slides is mentioned only to be condemned. The particles mash and adhere to the glass when they have to be removed for culture. While it may appear superfluous, I would plead for adequate statements on report blanks as to the part of the body from which scrapings have come, the clinical diagnosis, and the kind of treatment that may have been employed. Here, again, assistants in the busy office frequently omit these rather important details.

Microscopic Examination.—The conventional examination in KOH solution need not be detailed here. Usually it suffices for determining whether fungus is or is not present. May I speak a word of caution about using only as much of the solution as is necessary. Eye droppers are treacherous because they are likely to flood the specimen, with inevitable damage to the microscope. A glass rod or a swab stick can be dipped into the bottle, and sufficient fluid will always run from it for average purposes. It will pay to adopt this routine. If there appears to be insufficient fluid under the coverslip when it is first applied, this will correct itself as the materials soften and flatten out. Indeed, the capillary pressure of the thinner layer of fluid under the coverslip is definitely advantageous for thinning out the scrapings, compared to a thick layer of fluid. If needed, a dressmaker's needle, mounted in a handle, can be used to exert pressure on the top of the coverslip even while examining the preparation under the low powers of the microscope. It takes only a little practice to make one proficient in this, and it is surprising what may be accomplished thereby when one is doubtful whether an indefinite structure in the preparation is mycelium. The thinner and flatter the scraping, the better can one judge it.

Where one is constrained to a thick sample, it is always advisable to allow the specimen to stand for several hours or even over night before returning a final negative diagnosis. In the latter case, I prefer to place the entire preparation in a moist chamber rather than ring the coverslip with vaseline. It takes less time and is more certain. The moist chamber is made in a moment by placing wet filter paper in the bottom of a Petri dish.

Staining Methods.—These are seldom necessary for immediate diagnosis except in the case of suspected erythrasma and Monilia infections. In both of these, the fungus may be confused with products of tissue degeneration. A simple extemporaneous preparation can be made in such cases, too. Instead of the KOH solution, employ a drop of undiluted Giemsa stain. The glycerine in it serves as a clearing agent, while the dye brings out the details which distinguish fungus from tissue substance. It is imperative that a *minimum* quantity of dye be employed—even more so than in the KOH technic—otherwise the deep color of the Giemsa solution will obscure everything. After the specimen has stood for 10 or 15 minutes, during which the materials are becoming stained, a piece of filter paper may be pressed firmly on top of the entire preparation, whereupon the excess of fluid under the coverslip will be squeezed around its edges into the filter paper. If the preparation is still too opaque, a drop of distilled water can be run under the edge of the coverslip by capillarity. This not only corrects the opacity but leads to metachromatic staining of the scrapings, which decidedly assists in reading the specimen. By this "wet Giemsa" technic, I am confident that a considerable number of diagnoses will be made by the practitioner which would otherwise fail, particularly in erythrasma. Here the mycelial threads are so delicate that they can be readily overlooked in KOH preparations. Incidentally, in all wet preparations the diaphragm of the microscope must be stopped down to the limit. The low power of the microscope often suffices for the examination, but the high powers are necessary as a final check. Materials in erythrasma and in Pityrosporum, Monilia, and Nocardia infections are exceptions; the high powers of the microscope are always necessary in such cases because the fungous elements are so small and perhaps widely dispersed.

Cultures—Determination of Species

It is common knowledge that the cells of Sporotrichum schencki are so difficult to identify by direct microscopic examination that cultures must be resorted to—certainly in busy offices and clinics. Fortunately, the appearance of colonies in the test tube is rather characteristic. At first they are yeastlike, being creamy and pasty. At this stage they are not diagnostic, but in 3 or 4 weeks they become black. This sequence of events is almost pathognomonic. The diagnosis is confirmed by placing the test tube directly on the stage of the microscope and examining the margins of the colony under the low powers. The conidia are arranged in trefoil or collar-like aggregations that are quite characteristic.

By and large, it can scarcely be expected that the clinician shall become proficient in culturing and identifying fungi. Of late, however, a highly practical application of determinative mycology has arisen in connection with Microsporon lanosum and M. audouini infections of the scalp, and the Trichophyton purpureum examples of dermatophytosis. The identification of the species is not possible by direct examination of scrapings; cultures are necessary. In the case of Trichophyton purpureum, the development of a rich wine-red color in the colony will probably suffice, at least for rough clinical purposes. This will not develop until the colonies are 3 or 4 weeks old. In a rough way, too, M. lanosum and audouini may be differentiated without resort to complicated mycologic procedures. The fungus should be planted on Sabouraud's test medium in the test tube and allowed to grow for 3 or 4 weeks. The tube can now be laid directly upon the stage of the microscope and the thinner parts of the colony be viewed through its wall under the low powers. The thinner parts of the substrate at the top of the slant are the more suitable for this study. If there are large numbers of spindles (fuseaux), it is not M. audouini, but this is as far as one can go without yet more refined mycologic examinations. In short, at least M. audouini can be excluded from consideration. After practice in viewing a number of such cultures, the practitioner may learn to recognize a certain tawny yellow tint in the periphery of M. lanosum colonies when viewed grossly, and the rather characteristic radial furrows of M. audouini.

The identification of Monilia albicans, too, is frequently desirable. It is now conceded that this is by far the commonest pathogenic yeast in human medicine. Its identification, as far as the private office is concerned, can be made only by microscopic methods because so many yeast forms have a similar pasty, creamy character, although the development of substrate mycelium in older cultures is highly suggestive. In cultures the yeast cells are large, spherical ones, thus contrasting with many of the "wild" yeasts which tend to be smaller and perhaps ellipsoidal or pyriform. Mycelial threads are also formed by M. albicans in cultures. Rather recently a clear-cut advance has been made in identification by growing the fungus on corn meal agar. Employing a thin stratum in the bottom of a Petri dish, chlamydospores are developed upon the mycelium which are highly distinctive for M. albicans. Incidentally, the feces should be examined for Monilia when yeast cells have been found in scrapings. The intestines may be a reservoir of infection.

The question occasionally arises whether cultures succeed in identifying fungus when the direct KOH technic fails. In my experience, generally they do not. There are exceptions though, and they have been so important that they are made routinely in my laboratory. This is particularly in point where the patient has made the rounds of several other dermatologists who have failed to demonstrate fungus in KOH preparations. Several months may go by without a positive culture (the KOH preparation also negative), and then one will crop out in a way that is a great satisfaction.

Fallacies.—In specimens of pus from deep mycoses, more or less degenerated elastic tissue fibers appear almost invariably. They can be identified by the lack of segmentation, their wavy or serpentine course, their delicacy and uniform caliber, and the absence of granularity and of branching. Sometimes they split. All of these features are contrary to the circumstances for Actinomyces, with which they might be confused.

In potassium hydroxide preparations the alkali interacts with lipoid substances which are invariably present in the tissues in such a way as to produce rounded structures which may be mistaken for yeast cells. Their refractility compares favorably with that of yeast cells, and only too frequently their form suggests budding. However, they are highly variable in size; indeed, some are gigantic. They have a double membrane, but it is too thick—ridiculously thick in some of the forms—and the interior is entirely free of granules or other formed structures. Oil and air bubbles should not occasion any trouble.

The foregoing, I hope, will supply points here and there which may be useful to the practicing dermatologist, although most of it is repetition of data which he already knows. It cannot be expected that it is comprehensive enough to cover all of the mycologic situations which arise in every dermatologist's practice; there are many situations which necessitate highly technical procedures and the attention of the trained mycologist. Nonetheless, others may be solved by the dermatologist himself after reference to standard texts. In any event, there is one phase in all mycologic studies in which the practitioner must be proficient and which he must always keep before him; namely, the proper collection and transmission of materials. It is for this reason that the main body of this communication deals with those phases. The mycologic specialist begs of the practitioner to take this seriously to heart and join hands with him. Otherwise, the purpose of a mycologic examination will be defeated at the start and a falsely negative and meaningless diagnosis will result.

ABSTRACT OF DISCUSSION

Frederick M. Jacob (Pittsburgh): As Dr. Hegarty has shown and Dr. Weidman has discussed, there are a number of complicating factors in the matter of ringworm of the feet and hands. The prognosis is therefore sometimes rather puzzling. We find that people frequently ask the question: Can you cure this permanently? Personally, I tell them, no. I cannot promise them an absolute cure, because I do not know how susceptible they might happen to be and how faithful they will be with treatment. Some of the fungi get into the crevices of the nail, not necessarily causing an onychomycosis, but they form spores and then a spell of hot weather allows them to grow out. In the examination one can frequently find plenty of spores in the corners of the nail in cases where there is not a sign of fungous infection, so that in the matter of prognosis it is very difficult to promise anything.

The matter of prevention is not so well taken care of and here again the prognosis is complicated. The proper washing of bath towels and bath mats, particularly in some golf and athletic clubs, is not considered by those in charge as being entirely necessary. I remember going over the matter with the chairman of the house committee in a golf club and learned that their towels were simply thrown into the washing machine and washed in water that was not necessarily hot or even warm. This club had a big pan of hypochlorite for the members to puddle their feet in, but no precautions were taken as to towels. The same thing applies to woolen socks, etc.

As for onychomycosis, here again it is a question of the patient's persistence. The first rule is to tell the patient he will not be well for 6 months and probably not then. I have seen cases that have taken as long as a year and a half before treatment is effective. In some more resistant types of fungus we have found that the strength of the remedy can be increased enormously, so that Whitfield's ointment, which seems a very strong preparation, can be even doubled in strength. I have a personal friend who used Whitfield's ointment in double strength for a year and a half. His case was so resistant that he could not stop using a remedy for a long period of time.

These examinations of clinical material, except to an expert like Dr. Weidman, are extremely difficult. They are very time-consuming in office practice and in a majority of cases the results are very discouraging. However, as Dr. Weidman states, with persistence one can gain a great deal of information in some cases and this information is valuable in resistant cases. We have one such at home now that has been going on for a year and a half, a generalized type of ringworm infection. A culture was finally made by Hopkins in New York. The patient was using double-strength Whitfield's ointment on the body. She is finally beginning to show improvement with vaccine. Sometimes a culture is absolutely necessary in the very resistant cases.

Dr. Weidman: Dr. Hegarty gave a splendid presentation of the various forms that dermatophytosis can take. It is a condition which every dermatologist knows cannot be treated by the same formulas all the time. The physician has to treat the particular stage at which he encounters the disease. The acute exanthematous form was not demonstrated. I have seen 2 cases of this sort. The diagnosis was made because the exanthematous expression settled finally into the inguinal region and suggested microscopic examination. Another form is the lichenoid type of Jadassohn (lichen trichophyticus), characterized by patches which look like pityriasis rubra pilaris. In such cases the practical point in diagnosis is that scrapings of the surface will not show the fungus. It is necessary to extract the hairs. In principle, these plaque-like cases are folliculitis.

Albert Strickler (Philadelphia): The problem of ringworm is so important and so often encountered in the dermatologic clinics, and also in general practice, that I feel like re-emphasizing what Dr. Weidman said —that in the treatment of ringworm fungous infections it is most important to treat the stage in which the lesions are found. At times one encounters a condition that looks like an acute inflammation of the skin, and it must be so treated. At other times the picture is one of a typical ringworm fungous infection, and as such it must be treated.

At the Skin and Cancer Hospital we have learned that, in order to obtain a good result, it is important in these quiescent cases to do 2 things—to make the ringworm fungus just as unhappy as we can and at the same time to apply a fungicidal agent. We have found that lemon juice applied to the superficial types gives good results—not only good clinical results but results which seem to be justified on the basis of fungus examination. Within the past year we have repeatedly found, where the fungus seemed to have been lying dormant for a period of time, that the use of a preparation of lemon juice seemed to cause the fungus to disappear and stay away for a reasonable period of time.

THE FOUNDATION PRIZE

The rules governing the award of "The Foundation Prize" of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons are as follows:

1. The award which shall be known as "The Foundation Prize" shall consist of $150.

2. Eligible contestants shall include only (a) interns, residents, or graduate students in obstetrics, gynecology, or abdominal surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching obstetrics, gynecology, or abdominal surgery.

3. Manuscripts must be presented under a nom de plume, which shall in no way indicate the author's identity, to the secretary of the association, together with a sealed envelope bearing the nom de plume and containing a card showing the name and address of the contestant.

4. Manuscripts must be limited to 5000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis.

5. The successful thesis shall become the property of the association, but this provision shall in no way interfere with publication of the communication in the journal of the author's choice. Unsuccessful contributions will be returned promptly to their authors.

6. Three copies of all manuscripts and illustrations entered in a given year must be in the hands of the secretary before June 1.

7. The award will be made at the annual meetings of the association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the association. The successful contestant must meet all expenses incident to this presentation.

8. The president of the association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the secretary of his name and address at least two weeks before the annual meeting.—James R. Bloss, M.D., Secretary, 418 Eleventh Street, Huntington, W. Va.

FACE ERUPTIONS DUE TO NAIL POLISH MAY BE IMPROPERLY DIAGNOSED

Because skin eruptions due to nail polish are more likely to occur about the face than the nail folds or other parts of the hands, many cases may not be properly diagnosed, Lester Hollander, M.D., Pittsburgh, observes in *The Journal of the American Medical Association* for Nov. 16.

He reports 3 cases in which the eyelids and areas of the chin below the lower lip were involved. "This must have occurred by contact," he says, "such as straightening the eyebrows with the lacquered nails and possibly by the habit of playing with the areas on the chin." In one case the left side of the neck was involved, due to the patient's habit of doubling her hands and keeping her nails against her neck during sleep. In no case were there eruptions on the hands.

Pyrexia of Obscure Origin

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Importance of a Correct Diagnosis

THE first requirement for the successful and intelligent management of a case of illness is a correct diagnosis. Even though the general treatment of each of a group of febrile diseases may be the same, the knowledge that a correct diagnosis has been made brings assurance to both the patient and physician that is well worth the time and effort put forth to determine such a diagnosis. Practically every physician at some time during his professional career has encountered cases of febrile disease in which the diagnosis has been difficult or perhaps never has been made to his complete satisfaction. Many such cases have been watched closely, treated symptomatically, and ended in recovery without an accurate diagnosis having been made.

Advances in Medicine

In no profession during the past 25 years has there been a greater change in the methods of practice than in medicine. This change has been due largely to an amazing development of technical diagnostic procedures. The development and application of bacteriologic methods has enabled us to determine the nature of many febrile conditions. A few years ago the better practitioner took a careful history, did a painstaking physical examination, perhaps tested a specimen of urine or made a blood count, and then was obliged to offer a diagnosis on the basis of these data. Today a physician may well despair as he regards the many laboratory procedures and special tests which have flourished for him. The big problem for the modern physician is to choose wisely from the abundance of scientific equipment.

In the preparation of this paper we are not interested in the typical cases of pneumonia, pyelitis, typhoid fever, or such diseases in which a positive diagnosis can be made by routine tests over a short period of time. The conditions about which we must be concerned are those in which day after day the record shows an elevation of temperature in spite of the fact that all methods of examination have proved negative.

Important Tests with Reference to Obscure Fever

It is to be assumed that the routine tests such as urinalysis, blood count, blood chemistry, and Wassermann test will be completed soon after the history is taken and physical examination is made on all patients. The information obtained from these routine procedures will in a large percentage of cases reveal a positive diagnosis in less than 10 days' observation. One must now be guided by a different principle; namely, will the test in question solve some definite problem such as a prolonged elevation of temperature? No greater field has been opened for the diagnostician, especially when pyrexia is concerned, than that of clinical bacteriology.

Blood Culture.—In many cases of prolonged fever a blood culture will reveal an organism such as the typhoid bacillus or Streptococcus viridans. The test sounds easy, but the accuracy of such findings depends upon the type of laboratory with which we must work. The cultures must be collected properly, the technical procedures must be adequate for successful growth of the organism, and the results must be interpreted in accordance with the clinical features of the case.

Agglutination Tests.—These are extremely important in the consideration of atypical, prolonged, and obscure fevers. The Widal test for typhoid fever is an old procedure, but nevertheless a valuable one. More recent developments have given us agglutination tests for tularemia, undulant fever, typhus, and Rocky Mountain spotted fever. One must remember that positive agglutination is not usually obtained during the first week of the disease. The second week shows the presence of agglutinins which rise sharply during the third week, and the agglutinating titer remains high for 2 or 3 weeks when it begins to decrease.

Read before the Section on Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

Roentgen Ray.—Roentgen-ray diagnosis must be given due consideration. This diagnostic aid is of less importance perhaps than some others as far as obscure febrile conditions are concerned, but it must be given proper value and interpreted accordingly. A shadow at the apex of one lung in association with a cough, loss of weight, and fever must be considered tuberculosis until it can be diagnosed otherwise.

Sputum Tests and Throat Cultures.—These tests must be interpreted properly, since the upper air passages of all individuals contain pathologic bacteria from the first day of life until death. Mixtures of saliva, nasal hawkings, and sputum taken from the usual bedside sputum cup yield mixtures of bacteria that are meaningless. If properly collected and examined, sputum tests may reveal tubercle bacilli which have been the cause of an obscure fever for many weeks.

Tests of Lesser Importance.—These tests will be mentioned only.

1. A stool examination is of more importance in the South and tropics, but the finding of unsuspected parasites justifies the time and effort used in making the test.
2. The sedimentation rate has been found quite helpful in many cases of elevated temperature.
3. A lumbar puncture must not be overlooked in cases of meningitis, syphilis, and even tuberculosis.
4. Rectal and vaginal examinations are usually part of a complete physical examination, but must not be forgotten.
5. Roentgen ray of the paranasal sinuses and teeth as well as some therapeutic tests must be used in difficult cases.

It is not intended, however, that this vast supply of laboratory methods shall be used as a substitute for close clinical observation, which still, as in the past, forms the foundation structure of diagnosis.

Causes of Obscure Fever

An exhaustive list of possible causes of pyrexia would cover the range of a modern medical textbook and diagnosis may comprise anything from carcinoma to hysteria. Advances in medical knowledge have without doubt made a decided change in the type of diseases which have been difficult to diagnose during the past quarter of a century. It is not so many years ago that typhoid fever comprised the largest group of febrile diseases which were difficult to diagnose. As time passed, our health departments became more efficient and laboratory technic more accurate, so that fewer cases of typhoid fever developed and the diagnosis was made more quickly after the onset of the disease. A few years later the typhoid group of diseases seemed to be replaced by tuberculosis as the prime cause of obscure fever. Probably better conditions of living, more complete and careful examinations, and a "tuberculosis consciousness" have reduced the number of these cases until today tuberculosis is not the leading cause of obscure fever. The past few years have brought forth the undulant fever and tularemia groups to puzzle the diagnostician and cause him to wonder what will be the next febrile diagnostic problem.

The numerous diseases giving rise to obscure fever may be classified and subdivided into as many groups as there are writers to subdivide them. The following classification seems to cover the field as well as any:

The Infections.—The commonest cause of continued fever is one of the infections, including bacterial, protozoal, and mycotic diseases. A sound knowledge of these organisms is essential. More or less specific fevers such as typhoid, undulant fever, influenza, and malaria are diagnosed correctly in the course of time with the aid of a good laboratory. Infections in which localized pus forms eventually include a large group, such as suppurating glands of the neck, mastoid abscess, empyema of the thorax, perinephritic abscess, and numerous others. There is still a large field of infectious diseases including tuberculosis, subacute bacterial endocarditis, pyemic and septicemic states, and various types of arthritis. This group contains the more difficult types to diagnose.

Functional Pyrexia.—Some patients run a low form of continued fever without any apparent reason for it and without any apparent ill health. In spite of the fact that these patients contend that they are absolutely well, one is always on guard lest there be latent disease, particularly tuberculosis or subacute bacterial endocarditis. Only after months of observation can one classify these cases as functional.

Toxin Origin.—Degenerating new growths such as fibroids, sarcomas, and carcinomas with metastases produce elevation of temperature. This group also includes lymphosarcoma and Hodgkin's disease. No doubt the pyrexia of primary and secondary anemias might well be placed in this class. In general these diseases are well advanced before the elevation of temperature is constant and a thorough examination will frequently clinch the diagnosis.

Endocrine Causes.—The thyroid gland is the chief member of the group which at all frequently gives rise to slight but persistent pyrexia without obvious signs. Early Graves' disease, when once considered, can be diagnosed without difficulty in most cases. But it is not, perhaps, generally recognized that for several months the disease may be accompanied only by a raised temperature, trivial loss of weight, and nervousness without tachycardia or appreciable thyroid enlargement.

Fictitious Pyrexia Produced by Malingerers.—This condition is not found frequently, but nevertheless it occurs far too often. The tricks employed by these malingerers are varied and numerous. They are employed by patients who do not wish to return to work or find life in a government hospital more desirable than doing hard labor.

After various tests have been made with a lot of meditation, we frequently must ask the question, why is the fever still present? Various reasons may exist for the failure to recognize the cause of a particular fever.

1. The course of the disease may be atypical.
2. The type of infection may be of infrequent occurrence in the locality in which it is found.
3. No characteristic symptoms may be present, or they may be of too short duration.
4. The disease may not be well known, such as undulant fever.
5. The cause may not occur to us.
6. Lack of thoroughness in some routine investigation which does not require extraordinary skill accounts for many failures.

Finally, I wish to present 4 brief case reports to illustrate some of the puzzling problems.

Case Reports

Case 1.—This case is presented to show that clinical manifestations develop after a period of observation which establish the diagnosis. The patient, a white female, age 57, had been working as a laundress 2 weeks before her admission to St. Francis Hospital. She became ill with pain in the lower abdomen, chills, and sweating spells. These symptoms were followed by hematuria and scanty flow of urine. Following her admission to the hospital, a diagnosis of acute nephritis was made. This condition responded to routine treatment, but the patient continued to have an elevated temperature. Urinalysis on admission revealed hyaline and granular casts, occasional red blood cells, and albumin. The blood count, Wassermann test, blood cultures, and agglutination tests showed nothing significant. Roentgen ray of the chest suggested old healed tuberculosis.

During her stay in the hospital the same septic type of temperature continued. Four weeks after her admission to the hospital the patient complained of pains in the right lower quadrant of the abdomen and tenderness was noted over the right kidney. This was the first evidence we had of a perinephritic abscess in spite of numerous tests and several consultations with 2 genito-urinary specialists. Roentgen ray confirmed our opinion and a perinephritic abscess of the right kidney region was drained of approximately 500 c.c. of pus 38 days after admission to the hospital. The patient made an uneventful recovery, her temperature returned to normal, and she was discharged 15 days after operation.

Case 2.—This white female, age 26 and married, had been traveling about in 2 different states with possible exposure to B. typhosus. Several weeks after her return home she developed fever and chilly sensations, but continued with her usual activities and her condition was diagnosed influenza. These symptoms were followed by abdominal pains, mucous diarrhea, anorexia, and malaise. The elevation of temperature persisted and she entered a hospital where a positive agglutination of paratyphoid-A bacilli was found in her blood serum. She was treated accordingly. Four weeks later, because of unusual duration of the fever and the fact that it continued to be as high as at the time of onset, the patient was moved to another hospital for further study.

During this period of hospitalization her temperature ranged from 98 to 104 F. The pulse variation was 96 to 120 and the respirations 20 to 36 per minute. Roentgen ray of the chest revealed a mass of enlarged glands just to the right of the superior mediastinum. There was also a consolidated area involving the middle of the left lung. These enlarged glands are suggestive of some form of lymphoblastoma. Agglutination tests were negative and sputum tests showed no acid-fast bacilli. Other tests were not abnormal. This patient was discharged from the hospital 4 days after admission with a tentative diagnosis of Hodgkin's disease. A report from her physician 4 weeks later stated that her condition was gradually growing worse, and the temperature fluctuation remained the same.

This case is presented to show the importance of accurate laboratory work. We must not depend too much upon a diagnosis, if after a reasonable period of time the patient should not show improvement from that particular disease. In this case more laboratory data, as the roentgen ray, revealed evidence of glandular disease, which most likely is Hodgkin's disease and time aids in proving this fact.

Case 3.—A white male, age 16, was admitted to St. Francis Hospital complaining of fever and a very tired feeling. The onset of this illness was 13 weeks previously during a fishing trip in Canada; his first symptom was pain in the right side of the abdomen opposite the umbilicus. For 3 weeks this pain continued at irregular intervals and was accompanied by night sweats and fever but no chills. He was then treated in a hospital after his return home for 3 weeks where a diagnosis of rheumatic fever was made. Later he was treated in another hospital for 2 weeks, but the tired feeling and pyrexia continued.

When admitted to St. Francis Hospital, the same symptoms prevailed. Nocturia was noted at times, but no other signs or symptoms of importance were noted. The past history revealed no unusual facts. Examination showed slight roughening of the first heart sound at the apex and slight tenderness over the right side of the abdomen. Various tests and consultations gave no help in diagnosing this case, except the agglutination test for B. abortus which was positive at 1-80 dilution. However, the skin test for undulant fever was negative. The patient remained in the hospital 34 days and showed quite an irregular temperature curve, ranging from 97 to 102 F. Sulfanilamide therapy was started 20 days after admission and 35 Gm. were given. His temperature returned to normal and he was discharged with no complaints or symptoms. This patient has been observed frequently since that time. No fever has been present. He regained his weight and strength and returned to school.

Our final diagnosis in this case was undulant fever in spite of the fact that the agglutination test did not show a very high dilution. This is an illustration of the fact that we frequently have to resort to a therapeutic test, and the recovery of the patient is our chief goal even if the diagnosis might be disputed.

Case 4.—This white male, age 19, was admitted to St. Francis Hospital because of severe headaches, back and abdominal pains. He had worked as a clerk in a butcher shop until 2½ weeks before admission with no complaints except a tired feeling. He was sent to the hospital for a spinal tap and remained because of a high fever. This treatment relieved his headaches but other symptoms remained. He had an occasional sharp cough on admission, but it was not productive. Examination showed nothing except a few carious teeth. Roentgen ray of the chest soon after admission showed a fine nodular opaque condition disseminated evenly throughout the lungs, possibly miliary tuberculosis. No consolidation was present, but a checkup by roentgen ray 3 weeks later showed widespread nodulation quite suggestive of miliary tuberculosis. The Widal test was positive for B. typhosus, but the patient had received typhoid vaccine 3 weeks before admission.

During his course in the hospital the chills and elevated temperature continued. Changes were noted in the lungs, including impaired resonance, coarse râles, and pleural friction rub in the left axilla. He became confused as his condition advanced and death occurred 7 weeks after admission. Necropsy confirmed the diagnosis of miliary tuberculosis.

This case is presented as one of the common types of obscure fever which is frequently not diagnosed without the aid of the pathologist.

Summary

1. A correct diagnosis is important in the successful management of any illness.

2. The development of technical diagnostic procedures has greatly reduced the number of cases of obscure fever.

3. The causes of obscure fever may be classified to suit our fancy.

4. Case reports have been presented to illustrate our points.

In conclusion, I wish to state that careful study of all cases of pyrexia will reveal a diagnosis in many instances. Some cases of pyrexia will require a longer period of time and the use of more tests than others. Clinical manifestations develop which establish the diagnosis, and therapeutic procedures aid in other instances. Surgery must be resorted to in some cases for a diagnosis. Finally, there is a certain percentage which cannot be diagnosed or cured and the necropsy table is our last teacher. As time goes on, may careful examination and more complete laboratory facilities make our percentage of diagnoses greater so that the patient may have the benefit of early and modern treatment.

ABSTRACT OF DISCUSSION

Alexander H. Colwell (Pittsburgh): Long before the invention of the clinical thermometer fever was recognized as perhaps the most common sign of sickness. Its presence ordinarily is easily recognized by both patient and physician and it is usually accompanied by a more or less fixed set of symptoms which make the patient feel ill. Many of the notable advances in medical progress have been made when the exact cause of a given type of fever has been discovered. Today, hundreds of cases of fever, which a few generations ago would have been baffling mysteries, are easily explained by the refinements of diagnosis referred to by Dr. Clark in his paper. However, a not inconsiderable number of fever cases present themselves in the course of the experience of every physician in which the fixing of the exact cause is either not possible at all or is never done with an entire satisfaction that the answer found is unquestionably correct; or one is forced to accept the final explanation of the necropsy, too late to be of help to the patient, and even this authoritative source of solution of so many clinical problems at times fails one.

There seems to be a universal interest among physicians in unexplained fever. Perhaps we have become so used to the unexcelled diagnostic aids of our times that an unexplained or not satisfactorily explained fever is a rather painful reminder of the darkness or ignorance from which our profession has emerged and which still obscures so many areas to which the light of scientific truth has not yet penetrated. Such fevers should, and usually do, seem a special challenge and stimulate the physician to redoubled energy in his study. Sometimes it would seem that, in such circumstances, the poor patient is almost taken apart in this search by some of our more enthusiastic brethren.

Obscure or unknown fevers have been variously classified, usually by duration or degree or both. A simple classification by Hammon and Wainright has been based roughly on the degree of fever. It permits, for the moment, of certain generalizations. By it fevers are classified as (1) low grade, i. e., rarely reaching 101 F., and (2) higher fevers.

The generalizations with relation to low-grade fevers are suggested by Kintner and Rowntree in their report in 1934 of a study of 100 cases of "long-continued, low-grade, idiopathic fevers." They are rather interesting and are as follows: (1) The great majority recover (97 per cent). (2) Tuberculosis seems to be the most common error in diagnosis (26 per cent). (3) "Focal infection removal did not materially increase the percentage of patients who recovered," and parenthetically Hammon and Wainright say the following: "If we consider the relation of long-continued, unexplained, low-grade fevers to focal infection, we must conclude from experience that there is no well-established relation between them." (4) Neurotic manifestations were pronounced in one-fourth of the cases. (5) The patients were more often females, the ratio being 3 to 1 as contrasted with males. (6) Such fevers were most frequent between 20 and 40 years of age. (7) The commonest symptoms were nervousness, exhaustion, and loss of weight.

Now referring to the second group of higher fevers, the generalizations here presented are the writer's own. They are as follows: (1) The tendency to spontaneous recovery is very much less than that of low-grade fevers. (2) An ultimate explanation is more often obtained. (3) Neoplastic disease, bacterial endocarditis, or vascular infections and tuberculosis are found eventually as the causes in a considerable number of these patients. (4) The present status of laboratory assistance in the diagnosis of chronic brucellosis leaves much to be desired. This latter generalization is suggested with fine restraint in an essay by Eugene P. Campbell in last month's *Pennsylvania's Health.*

Most public health officers probably believe that brucellosis is missed more often than it is diagnosed. In any fever of obscure origin it certainly should be made the subject of study. Certainly, in its chronic forms at least, its signs and symptoms are not specific. Precisely in this form laboratory aid is most uncertain. Agglutination tests have been reported negative in active cases proven by positive blood cultures. On the other hand, Hunt of the Geisinger Memorial Hospital, Danville, in 1000 unselected specimens of blood, found specific brucella antigens in concentration of 1:80 or more in 8.9 per cent. Skin tests have occasionally been found negative in known cases and at times positive in noninfected persons. The opsonocytophagic test is said to be the most difficult to perform. At least some competent pathologists feel it might as well be put back on the dusty shelves of laboratories where it has lain for the past 30 years until recently removed.

Hammon and Wainright, referred to before, made an intensive study of 36 cases of long-continued fever. An accurate diagnosis was eventually made in 10 of these, 3 of which had brucellosis.

Fever of obscure origin is always interesting and intriguing to the careful physician. Such fevers are of fairly frequent occurrence. They make the internist especially aware of his dependence on laboratory procedure and justify his insistence that the quality of the laboratory equipment and the skill of his colleagues who use it must always be of the highest order. It may be accepted as an axiom that no hospital can rise above the level of its laboratory. The higher the level of laboratory efficiency the fewer will be obscure and undiagnosed fevers. Patients with obscure fever require hospital study.

MEETING OF PENNSYLVANIA PHYSIOTHERAPY ASSOCIATION

The annual meeting of the Pennsylvania Physiotherapy Association, Inc., sponsored by the Hospital Association of Pennsylvania, will be held on Apr. 17, 1941, in the Green Room of the Bellevue-Stratford Hotel, Philadelphia. S. Paul Campbell, P.T., president, will preside. The program follows:

10 a.m.

Address of Welcome.
S. Paul Campbell, P.T., president, Pennsylvania Physiotherapy Association, Inc.

Greetings.
Roger A. Greene, president, Hospital Association of Pennsylvania, and director, Pottsville Hospital.

"Electroshock Therapy."
Donald W. Hastings, M.D., clinical director, Department for Mental and Nervous Diseases, Pennsylvania Hospital, Philadelphia.

"The Importance of Technic in the Use of Electrotherapy."
Helen L. Kaiser, P.T., past president, American Physiotherapy Association, Cleveland, Ohio.

"Treatment Used in Cerebral Palsy."
Helen Fitler Kenney, P.T., secretary, Pennsylvania Physiotherapy Association, Inc., and Willis Martin School for Crippled Children, Philadelphia.

Business meeting for members only.

Luncheon—12:30 p.m.

2 p.m.

"Program for the Philadelphia Public Health Department."
Hubley R. Owen, M.D., director, Department of Public Health, Philadelphia.

"The Use of Physiotherapeutic Measures in Neurologic Conditions."
Bernard J. Alpers, M.D., professor of neurology, Jefferson Medical College of Philadelphia.

"Socialized Physiotherapy."
Francis F. Borzell, M.D., president, The Medical Society of the State of Pennsylvania.

"Orthopedic Surgery and Physiotherapy."
John Royal Moore, M.D., professor of orthopedics, Temple University School of Medicine, Philadelphia.

Annual banquet—7 p.m.

RURAL AUTO ACCIDENTS

"Excessive speed and lack of acquaintance with the hazards of the open road are responsible for most automobile accidents on rural highways," John H. Powers, M.D., Cooperstown, N. Y., states in *The Journal of the American Medical Association* for Nov. 2. He says that during 1930-1939 inclusive 712 patients were treated for 2891 injuries sustained in 492 automobile accidents in a rural area traversed by a transcontinental highway.

Such accidents occurred most frequently on summer week-ends while driving straight ahead in open country on dry roads, in clear weather, and during the hours of daylight. Accidents in which no collision occurred were most frequent; head-on collisions with other cars, with fixed objects, and with pedestrians were common. These 4 types of accidents accounted for 82.6 per cent of the total.

Males were involved twice as frequently as females. Serious injuries were common. Fractures comprised 22 per cent of the traumatic lesions; 26 per cent of the patients sustained concussion of the brain and 15 per cent were in shock. The head and neck were injured with twice the frequency of the trunk or either of the extremities. The accidents in which the car was in motion but no collision occurred were usually due to failure of the driver to make a turn when driving too fast on a road with which he was unfamiliar.

Neuralgias of the Face and Head

Their Diagnosis and Treatment

TEMPLE FAY, M.D.
Philadelphia, Pa.

IN looking back over almost 20 years devoted to the analysis of problems of pain, those affecting the head and face have, in my experience, offered the greatest difficulty in successful diagnosis and treatment.

The trouble seems to arise from 3 angles; *first,* because of the vague and uncertain use of terms by authors and members of the medical profession, who show a striking lack of uniformity in their understanding of the anatomic relations supposedly involved.

To mention only a few terms in use today whose origin may be traced to respectable and authoritative parentage, we find "major trigeminal neuralgia," "minor trigeminal neuralgia," "atypical facial neuralgia," "trifacial neuralgia," "tic douloureux," "occipital neuralgia," "supraorbital neuralgia," "sphenopalatine neuralgia," "vidian neuralgia," "buccal neuralgia," "sympathetic pain," "vascular pain," "lower-half headache," hemicrania, migraine, frontal headache, occipital headache, sinus headache, glossopharyngeal neuralgia, etc.

With the addition of toothache, earache, jawache, and the large group of "itis" known only to the rhino-otologist, confusion grows apace. It is obvious that some clarification must arise if our clinical experiences are to be of value, one to another.

Many of the foregoing classifications overlap and some derive their names from nerves involved or thought to be involved, while others such as "sympathetic pain," "atypical neuralgia," "lower-half headache," "buccal neuralgia," etc., either conceal their identity in vagueness or merely indicate the area rather than the nerves involved.

The *second* difficulty, in my experience, which may prevent an early proper diagnosis lies primarily with the patient. We must recognize that pain is a most difficult sensation or experience to describe in words; it is hard to evaluate and responses to pain may vary greatly in different races and individuals.

It seems particularly difficult for patients to describe accurately or definitely localize certain pains about the head and face.

Because of long suffering and medical disappointment, the patient may tend to exaggerate the complaints or use words whose meanings are misleading. For instance, on several occasions, patients have complained to me of "headache" localized near the vertex, and as this is a rare site for true pain, careful questioning revealed that what the patient actually felt was "pressure" or a "pulling and drawing feeling" and not pain at all. The treatment for pain and that for pressure are not always the same, but to the patient almost any discomfort can be called a pain, neuralgia, or headache.

Even more important is the clear understanding of where the pain is actually located, the direction of reference, and the exact character of the pain during its various phases and episodes.

Dr. Frazier used to require the patient to slowly trace, over and over again, with one finger the area and direction of the pain.

Sweeping statements or gestures indicating the whole head or face must be taken with reservations until details establish this fact or break down the general character of the complaint to a single locality. Above all, the patient and the physician must agree as to the meaning of terms used and the exact structures involved before attempting diagnosis and treatment.

The *third* difficulty seems to arise from the many varied reports in the literature as to results obtained in cases treated by what has seemed in recent years to be the "trial and error" method. Follow-up reports and end-results are lacking in many of the so-called "atypical" groups, and where much was claimed

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Read before the Section on Surgery of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.
From the Department of Neurology and Neurosurgery, Temple University School of Medicine.

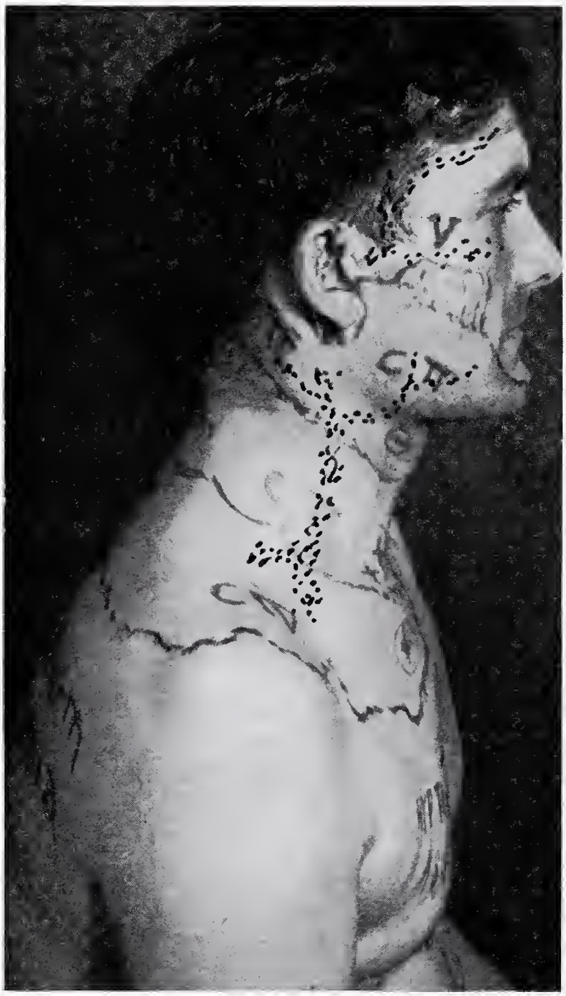

Fig. 1. Actual sensory nerve field of distribution to face, head, and neck with usual underlying pain reference areas indicated in the vascular type following the arteriovenous tree.

for certain destructive procedures, little now is heard of some of them—thank God!

Spiller and Frazier were able to clarify the diagnosis of the major and minor trigeminal neuralgias and to establish methods of treatment which have proved successful for each. There has been little addition to this clinical picture of pain since it was first described by Fothergill. Various methods of treatment for major trigeminal neuralgia, however, are still under discussion, but for assurance of results and safety, the Spiller-Frazier operation is still the most accepted method today.

Minor trigeminal neuralgia is diagnosed when alterations in the sensory field of the nerve or its branches can be demonstrated and a recognizable pathologic process discovered. Treatment depends upon the pathology.

Perhaps the 2 most important criteria of diagnosis for these true neuralgias are that the pain is sharp, short, and intermittent and that the distribution is anatomic to the location and direction of the nerve involved. The patient is able to describe clearly the character of the pain and suffering.

C. H. Frazier and E. C. Russell, in 1924, attempted to divide those patients with "typical" signs of trigeminal neuralgia (who found relief of pain from alcoholic injection or section of the sensory root of the nerve) from those suffering from pain in the head and face, who found little or no relief of pain from disruption of continuity of the nerve. This large, unrelieved "atypical" group concerns us most today.

There is, in my opinion, not only a distinct difference between "typical" and "atypical" neuralgia in the type of pain complained of by the patient but after careful observation and detailed study the pain can be identified with either the anatomic nerve structures to the part or to the underlying but often closely associated vascular tree and network.

The following types of pain frequently suggest the structures involved:

1. *NERVE.—Type of pain in true trigeminal neuralgia. (Follows nerve pattern.)*

   Sharp, shooting, stabbing, electric-like, jerks, twinges, flashing, intense.

2. *VESSEL.—Type of pain in vascular "stretch" or irritation. (Follows blood vessel pattern.)*

   Dull, throbbing, aching, boring, pulling, drawing, bursting, gnawing.

3. *ROOT.—Type of pain in root or nerve inflammation. (Referred to sensory field of nerve or "dermatomere.")*

   Combination of (1) and (2) above, but also burning (causalgia), tingling, "creeping," shooting.

If we are to employ an anatomic basis for diagnosis and classification, we should note that pain fibers reach the brain from the head and face by way of:

1. The cranial sensory nerves.
   a. Trigeminal.
   b. Vagus. (Glossopharyngeal and facial doubtful.)
2. The second and third cervical posterior roots. Occipital and auriculotemporal nerves.
3. The cervical sympathetic chain into the eighth cervical and first, second, and third thoracic posterior roots of the spinal cord.
4. The large vessels.
   a. Occipital, temporal, facial, maxillary, mandibular, meningeal, and cerebral

branches of the internal and external carotid arteries.

b. Jugular veins; superior and lateral sinuses.

c. Vertebral arteries down the neck.

d. Carotid sheath. { Back into vagus.
Down neck to upper thorax.

(Most of these pain fibers enter the trigeminal nerve; others descend into the thoracic cage and reach the first, second, and third thoracic roots via sympathetic pathways and rami. A few fibers loop back and enter with the vagus nerve.)

Much of the clinical difficulty today is due to overlapping syndromes and so-called "sympathetic" types of pain. If 2 fundamental systems of pain, one via the nerves and the other via the vessels, might be considered for the sake of simplification (albeit the latter may associate itself with some of the sympathetic chain and rami as a matter of convenient passage to the thoracic cord), I am sure a better approach could be made to the problem.

I believe I was one of the first to call attention (1927, 1932, and 1939) to the vascular rather than nerve origin of the so-called "atypical neuralgias" or "lower-half headaches" found to be associated with tenderness along the blood vessels (carotid artery and its branches, both external and internal). I chose to call these "vascular" neuralgias in contradistinction to the "true" neuralgias.

Many isolated and seemingly unrelated clinical pictures have been correlated with pathology about the vessels in the neck and chest, referring pain to the face and head.

Unless true pathology can be demonstrated, surgical attacks upon the sinuses are unjustified until the entire vascular tree in the neck and chest has received careful attention.

The most common type of vascular pain complained of usually concerns the "sinus area" and the patient demonstrates its location with the finger placed close beneath the eye and side of the nose. The finger is then drawn carefully along the zygomatic process or just above the external orbital area to the temple and from there to the anterior tragus of the ear. From this point the patient often skips the ear and starts again just behind and below the mastoid to trace the pain down the neck (Fig. 1).

This type of pain has been known as the "Sluder syndrome" and when associated with a sinus disease has been considered due to involvement of the sphenopalatine ganglion and its branches. From the neurologic standpoint, the patient has crossed with the finger the area of the second division of the trigeminal nerve, then the third divisional area, and passed on into the cervical distribution. Anatomically, however, the patient is tracing carefully the superior maxillary artery from its emergence as the infraorbital branch beneath the eye back to its origin from the external carotid, deep within the maxillary fossa. The course of the external carotid is traced from beneath the ear down the neck. Comparing the 2 common carotid arteries, the side of involvement and pain is found to be the most tender and responsive to palpation. Other branches of the carotid artery on this side, such as the temporal, facial, and occipital, may also share in this excessive tenderness. It is natural to expect in the field of infection, such as one might encounter in an antrum disease, that hyperemia along this vascular tree would be associated with not only increase in function (more blood to the involved part), as far as "stretch" and engorgement of the vessels are concerned, but there might be, in chronic cases, long-continued seepage or drainage along the vascular coat and near the sheath of the vessel itself.

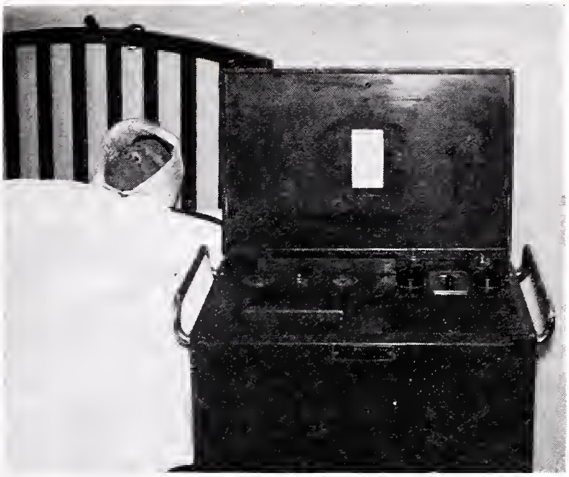

Fig. 2. Application of refrigeration hood for relief in "atypical neuralgia" and headache following encephalography.

Upper respiratory infections in children are often characterized by swollen glands in the neck, containing infections or inflammatory material which continues down along and close to the carotid sheath. Streptococcus viridans in the throat, I have found, often sensitizes these vascular fibers.

In 1932 I pointed out that stimulation along the carotid and near the bifurcation of the common carotid artery was capable of pain reference to the areas of the teeth, gums, lips, upper jaw, cheek, eye, and face. In other words, fibers passing down along the large vessels from the face and head carry with them fibers capable of conducting pain. Projection of pain along these pathways may be due to intrinsic pathology at lower levels involving these fibers as they enter the upper thoracic region.

It is natural when dealing with this type of pain that one should search for areas of involvement locally which might give rise to hyperemia and increase in vascular function and "stretch" which would account for the pain. Where no pathology is found locally, even though the pain may be intense in the malar region, the head, or face, it is well to trace the vessels and their course down the neck and into the chest. Here I have found that pathology may lie in the form of adhesions about the roots of the lung or upper thoracic area, involving the large vessels as they enter the thoracic cage.

Where disease has long since passed its active stage, or may have been chronic for years, it is important either to desensitize the fibers or interrupt them on their way to the central nervous system at a point central to their zone of involvement.

Treatment

Desensitization from infection is an important thing in many of the cases of chronic infection and, in our experience, where streptococci were isolated from the mouth and throat, we have found an autogenous vaccine of value. Sodium salicylate, aspirin, and whiskey often help to relieve this type of pain.

Hot baths, immersing the involved side of the face, neck, and trunk for a sufficient time to produce flushing in the area involved, are helpful. These must be repeated for many nights, followed by a warm pad to the neck, to be effectual.

Desensitization by histaminase is used at the Mayo Clinic and has helped in certain cases.

Recently, the use of a coil of tubing made into a "hood" to permit constant refrigeration of the head and neck at 40 F. has come into use in our clinic and has demonstrated its ability to relieve pain promptly. Prolonged relief of pain has followed 24 to 48 hours of refrigeration. Its ability to control even organic types of headache is most gratifying (Fig. 2).

Operative intervention, with destruction of the involved pain pathways, may be carried out in those cases which have not found relief from more conservative measures.

I am strongly opposed to the promiscuous use of unskilled alcoholic injections. Many such injections are blind attempts to relieve pain, only to create additional complications to the already difficult problem.

Too frequently the patient is permitted morphine and codeine, which only promote a habit and do not eventually relieve the disturbance. Morphine cannot be given for long to cases of true trigeminal neuralgia, as most of these patients not only resent its use but they suffer so intensely that they find the drug only promotes temporary rest and does not relieve the pain. I have not as yet encountered a case of true trigeminal neuralgia addicted to morphine. On the contrary, "atypical neuralgia" or "vascular neuralgia," as I have chosen to call this type of pain, is too frequently associated with drug addiction in patients who have vague, distressing, and prolonged symptoms, where the physician, in his inability to satisfactorily relieve the pain, has been forced to resort to the use of mild sedation and then narcotics, leaving the patient eventually dependent upon drugs and the medical profession.

An honest attempt on the part of the patient has usually been made to solve this problem, even to the point of frequent operative procedures, which have proved fruitless. The profession, on the other hand, seeing numerous and fruitless procedures undertaken for relief of pain—the sinuses invaded, teeth extracted, all manner of alcoholic injections, and destruction of true nerve tissue, without apparent relief—is quite prone to accept the diagnosis of "psychalgia." Our state of knowledge is not so perfected today that we can entirely blame our inadequacy upon the patient. It is hardly fair, because the profession has been unable to estimate properly or recognize a difficult pain symptom complex, that the patient should be classified as "functional" and eventually branded as one who is suffering from mental pain rather than true organic pain.

Patients frequently have been able to withstand their pain, many operations, and prolonged suffering, but when told that this is "mental agony" and not based upon true physical facts (simply because no established pain pathways could be demonstrated or relief obtained), their bitterness and disappointment in finding no answer to their problem have sometimes led to suicide.

The psychiatrist has taken as further evidence of "functional" and "unstable nervous mechanisms" the fact that these individuals do manifest neurotic symptoms, because of lack of sleep, constant anxiety, and dependence upon sedation, and that suicide has occurred in this group.

It is high time that we brought into correlation some of the pains and disturbances from which these individuals suffer. I believe the entire subject can be simplified along the lines of a "nerve" and a "vascular" basis, as we have found in our clinic since adopting this concept.

ABSTRACT OF DISCUSSION

Fritz H. Lewy (Philadelphia): Two points have been rightly stressed in this paper. The first is concerned with the differential diagnosis between typical and atypical facial neuralgia, i. e., the one that is benefited by blocking of the trigeminal nerve, and the other one that is not improved but even made worse. The leading symptom in this diagnostic endeavor is the subjective sensation perceived by the patient. Neuralgia is a vague designation. Neurologists and neurosurgeons define the word "neuralgia" in a certain, definite manner that is unknown to the layman. For him every type of nerve pain is a neuralgia.

One of the first aims of the physician in diagnosing facial pain therefore should be to find out of what sensations the patient complains. The patient with the true trigeminal neuralgia certainly endures the most excruciating pain for the duration of his paroxysmal attacks, but is free of pain in the interval. The patient with atypical neuralgia suffers from a continual throbbing and burning, or from a sensation as if the muscles of the face were twisted; but he will usually volunteer to admit that these sensations are a great nuisance rather than real pain.

Next comes the second point of this discussion; namely, what has been called the psychic component in the clinical picture, but what would be better characterized as the constitutional make-up of this group of patients.

Abolition of skin sensation leads in most individuals to cognizance of sensations in the deeper tissues. Hence, most patients with true tic state, when specifically asked, that they experience all kinds of strange sensations in the face after blocking of the trigeminal nerve.

But this group of patients just disregards these minor evils, glad to be rid of the intolerable shooting pain. In contrast to them, the patients with atypical neuralgia mind these sensations all the time, are entirely preoccupied by them, and gradually become a severe problem to themselves, their families, and their physicians.

To differentiate these 2 groups of patients with facial neuralgia and to indicate the correct type of treatment for each patient remains the essence of the problem. However, the unfortunate combination of typical and atypical features in the clinical picture of the same patient requires, in addition to a thorough knowledge of the pertinent symptoms and signs, great personal experience with the final result of the various types of operation in this disease.

ARE YOU A PROPRIETARY PHYSICIAN?

Physicians prescribe too many proprietary preparations. It is quite evident that the physician has become more and more a mere distributor of ready-made medicines.

When a physician prescribes a proprietary preparation by its coined name he not only flatters the preparation but he also generously aids the manufacturer in his attempt to familiarize the public with his product. Aside from the financial loss to the physician, there is considerable danger to the public in the practice of self-treatment.

Pharmacists in general report a large over-the-counter demand for certain proprietary preparations. As far as we are aware, these products have never been advertised directly to the laity. It therefore appears evident that the growing self-medication demand for these products results from either the ability of the patient to read the physician's prescription on account of its easily deciphered name or the unwise distribution of samples by the physician. In either event there is no question but what the physician *himself* is largely to blame for the public's familiarity with many proprietary preparations.

There are many examples of the misuse of popular remedies. We are particularly conscious of the danger involved in the promiscuous and ill-advised use by the public of the many antacid-alkalizer preparations now on the market. Physicians can help to correct this evil by restricting their prescriptions for this type of remedy to formulas which have titles not easily recognized as are certain coined names. For instance, ℞ Pulvis Bismuth Subnitratis Compositus, N.J.F., will not be easily deciphered by the patient and hence will not lend itself to self-medication. In addition, this formula is a very efficient antacid.

It should be remembered that the proprietary prescribed by the physician today is the patent medicine advertised to the public tomorrow.

Physicians should restrict their prescriptions to ethical formulas. By so doing, the art of prescription writing will be revived and ethical formulas more generally compounded.—*Journal of the Medical Society of Cape May County (N. J.).*

NEW WRINKLE

Group insurance is now being written, according to the current issue of *Business Week,* for the trucking company members of a large Chicago motor freight association. The policy covers hospital expense, surgical fees, sickness, and accidents.

This represents a new wrinkle in commercial group insurance. The insurance company agrees to write the insurance at group rates below individual rates for comparable coverage. The employee makes his own decision about buying, but if he decides in favor of insurance he gets his own policy and tells his employer to take the premium out of his pay.

Other loosely knit groups of individuals such as drug store chains, the retail hardware association, and the American Institute of Decorators are also arranging for similar group policies for employees of members, even when the individual member-employer operates only a small business with a limited group of employees.

The development of commercial insurance plans to cover hospital expense and surgical fees has obviously only begun but may reach proportions that will completely eclipse nonprofit community experiments in sickness insurance of this type.—*Minnesota Medicine.*

The Treatment of Compression Fractures of the Spine

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WITHIN comparatively recent times compression fracture of the spine has changed from a rather uncommon lesion to a decidedly commonplace one. Increased use of the automobile, with consequent increase in the number of traffic accidents, is largely responsible for this change; but more accurate diagnosis, as a result of the routine use of radiographic examination in back injuries, should also be mentioned. While at the hands of a trained and experienced surgeon this group of patients is receiving better, more rational, and more successful treatment than ever before, the average end result is far from satisfactory.

Insurance company statistics indicate that by far the majority of these cases are treated by physicians not specially trained in fracture management, and by methods at variance with those advised by most eminent authorities. The records of a large compensation insurance company operating in this state show the following:

1. The average period of total disability for a laborer with compression fracture of the spine is 12 months. Settlement is then made with the patient, who receives an award of from 25 to 50 per cent permanent partial disability.

2. The average treatment consists of 8 weeks' bed rest, often preceded by no attempt, or at best a half-hearted attempt, to secure reduction. Following this, a posterior spinal brace is applied for a further period of 10 months.

A consideration of the pathology of spinal fractures and a clear understanding of the usual causes of disability will demonstrate the fallacy of such treatment, and point out the true therapeutic indications.

Pathology

Most vertebral body fractures are caused by hyperflexion, one or more bodies being jammed together in such a way as to change the contour from oblong to wedge shape. The anterior portion of the block is mainly involved because of the nature of the force applied and because the posterior wall of the body is reinforced by the strong, compact lateral articular processes. When compression of a vertebral body occurs by lowering of the upper anterior surface, this movement takes place through an axis which passes through the posterosuperior angle of the injured vertebral body. The vertebra above can then drop down only if all the ligaments which attach the vertebral arches and spines are stretched or torn. The capsules of the lateral spinal articulations are also torn and the articular processes are partly or entirely dislocated upon one another.

In severe cases there is actually tearing of the extensor muscles of the spine. Occasionally, the interspinous ligament holds and the spinous process is split. The superficial hematoma which results from the injuries to the posterior ligaments is directly continuous with the hematoma about the compressed body, passing around the dural sac which is usually uninjured. The anterior spinal ligament practically always remains intact, being folded in the fashion of a bellows, but remaining firmly attached to the vertebral body. In this type of fracture, paralysis rarely occurs.

Causes of Disability

The causes of disability following compression fracture of the spine fall into 3 groups—those of static origin due to the angulation of the axis of the spine, resulting from the formation of the kyphus; those resulting from disturbances of the lateral intervertebral joints which have healed in the state of subluxation; and finally those which occur as a result of neurotic fixations.

1. In an elderly individual with spinal and hip motion already somewhat restricted the upper part of the body may be so inclined forward that he is able to walk only by leaning on a crutch or cane. Or, in this type of individual, erect posture may be assumed by bending the knees and tilting the pelvis backward. Younger patients with flexible joints compensate for this kyphosis by hyperextending their vertebral joints above and their hips below. This habitual hyper-

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extension usually gives rise to low back pain, often sacro-iliac in location.

2. Arthritic changes in the intervertebral joints are an almost inevitable sequel if good reduction is not obtained, and if effective immobilization is not carried out while the fracture is consolidating. That a similar situation occurs elsewhere in the body, particularly about the ankle, is well recognized, and it is difficult to understand why this condition is so frequently overlooked in the case of spinal fracture.

3. Not every patient who continues to have pain weeks and months after a spinal fracture is to be classified as a malingerer, even if clinical examination is negative. It is not difficult to understand what a deep psychologic impression may have been made on an unlettered and unlearned laborer who has sustained "a broken back" and finds himself confined to bed for weeks and then is fitted with a mechanical appliance which magnifies his fears and acts as a constant reminder of his injured back, month after month. While the desire for disability benefits may influence a small percentage of patients with spinal fracture, the complaint of pain and weakness is too often seen in cases where there are no medicolegal angles to warrant labeling all of them as malingerers.

Treatment

These factors may be circumvented only by adequate treatment. According to Jones, "It is exceptional for the patient with traumatic wedging of the vertebral bodies to be free from pain. The complaint is monotonous in its regularity. Many patients, years after injury, long after the conclusion of all medicolegal dispute, still complain of serious pain. It is the malalignment of interarticular joints which is responsible for joint strain and persistent aching." According to Böhler, "proper treatment of this fracture (as indeed is the case in every fracture) consists in correcting the displacement of the fragments as perfectly as possible, in holding it firmly in good position long enough for bony union to occur, and at the same time in ensuring that the limbs and the whole body are exercised to a full extent."

In modern times manipulative reduction began only a decade ago, the method having first been described by A. G. Davis in 1929. Like so many modern innovations, however, this method really dates back to antiquity. In a paper outlining the development of treatment of injuries of the vertebrae, Bennett traced it as far back as the Edwin Smith papyrus of ancient Egypt. A windlass-traction method of Hippocrates was described and various adaptations mentioned. Hyperextension was attempted by Hippocrates, who placed a pig's bladder beneath the lumbar vertebrae but was unable to inflate the bladder. In comparatively recent times Malgaigne successfully carried out manipulative reduction nearly 100 years ago.

Anesthesia.—As has been previously mentioned, the hematoma about the compressed vertebra is quite accessible, since it is continuous with that arising about the torn ligaments posteriorly. It is possible, therefore, to introduce novocain into this clot and allow it to diffuse in the region of the fracture, with perfect anesthesia resulting. The most prominent or most tender spinous process is located by palpation. The spot is marked by applying a skin antiseptic. A short needle is then inserted between the separated (or split) spinous processes and 30 to 40 c.c. of ½ per cent novocain injected. Anesthesia occurs almost immediately or within a few minutes.

Reduction.—The patient is turned on his abdomen and stockingette is drawn over the legs up to the chest. He is then transferred to an ordinary padded operating table. The legs are fastened securely to the table by two webbing straps, one passing around the calves and the other about the thighs. A third strap, the free ends of which are attached to an overhead pulley, is then passed under the upper chest. The chest is then gradually raised, the end of the table being dropped in the meantime so that the entire trunk is free. As hyperextension is increased, the gibbus deformity is seen to disappear and the normal lordosis is restored. This is brought about by tension on the anterior longitudinal ligament which becomes taut and, still being firmly attached to the vertebral body, overcomes the compression and impaction and restores the normal contour. As this occurs, the subluxated articular processes become replaced and the separated spinous processes approach each other.

Overextension is impossible due to the strength of the anterior longitudinal ligament and the overlying muscles (particularly the psoas) and due to the fact that the spinous and articular processes impinge on hyperextension. As soon as the contour of the back appears normal, roentgenograms are secured to confirm the reduction. If satisfactory position is demonstrated, it must be maintained by a plaster jacket long enough for the torn ligaments to heal and until the restored bodies of the vertebrae are strong enough to bear weight.

Application of the Body Cast.—The sternum, the symphysis pubis, the spinous processes, and the sacrum and the iliac crests are appropriately padded with felt. The remainder of the body is unpadded except for the stockingette. A cast is then applied, which extends from the sternal notch to the symphysis anteriorly and from the spine of the first dorsal vertebra to the gluteal cleft posteriorly. The cast is well molded over the sternum and symphysis in front, and the deepest point of the lumbar bodies behind, since it is at these 3 points that the cast must exert pressure to maintain the reduction. As soon as setting has occurred, the cast is trimmed to permit full use of the arms and legs. A sizable window is also cut over the abdomen and chest.

After-Care. — Since, in the hyperextended position, the body weight is transferred from the injured vertebral body to the strong intact lateral and posterior processes, the patient may be up at once and even undertake light work. To prevent atrophy of the back and gluteal muscles, systematic graduated exercises are carried out daily. The cast is left on from 3 to 6 months. If the treatment is carried out faithfully, the ligaments unite just as in other parts of the body, the vertebral joints remain mobile, and the vertebral bodies again become capable of weight-bearing. At the end of the treatment it is not unusual for the patient to be stronger and to show a better developed musculature than before the injury was received.

It will be noted that no mention has been made of the use of a posterior spinal brace. As has been stated by Jones and others, these appliances have no place in the modern treatment of vertebral body fractures. During the period before the fractured body has consolidated, it is mechanically impossible for such a brace to maintain reduction. Once the fracture has healed sufficiently to make removal of the cast safe, a spinal brace is unnecessary. The only exception to this rule is in the case of elderly patients, who are not able to undergo the rather strenuous program outlined. In this group the use of a brace may be advisable purely as a symptomatic measure—to relieve pain.

The Rôle of Spinal Fusion.—Ample experience both in this country and abroad has shown spinal fusion as a primary method of treating the injury under consideration to be wholly unsatisfactory. In spite of a skillfully performed fusion operation, the majority of patients so treated, particularly if their occupation is of a strenuous character, fail to return to work. It is obviously foolish to expect fixation of a segment of the spine in the region of the old fracture to relieve symptoms arising from a chronically strained spinal or pelvic joint far removed from the injured area. However, if manipulative reduction has not been tried or was unsuccessful, and if repeated examination shows the symptoms to be referable to the chronically subluxated intervertebral joints of the involved vertebra, a fusion operation may be successful in relieving the symptoms.

End Results

While I have no personal statistics to present at this time, it is my impression that they will compare favorably with those reported by Jones. Eighty per cent of his patients returned to their former occupations, one-half of them being engaged in heavy manual labor. The average period of disability varied between 7 and 10 months, depending upon the strenuousness of the patient's occupation.

From the anatomic viewpoint, in many cases perfect reductions can be obtained and it is practically always possible to maintain all this correction. Proliferative changes with consequent partial fusion of the involved bodies are held to a minimum, and full flexibility of the spine is regained.

ABSTRACT OF DISCUSSION

John Paul North (Philadelphia): The term "broken back" suggests such calamitous associations with injury to the spinal cord and paralysis that it is well to call attention to this numerous group of compression fractures without any neurologic disturbances. I am very glad to hear Dr. Outland give the weight of his authority to making these patients ambulatory. Many physicians are afraid they will be guilty of negligence if they allow a patient with a fractured spine to be out of bed earlier than 3 months.

If the hyperextension is properly maintained by the cast, these people can safely be on their feet early. We make it a rule to take a lateral roentgen-ray film on the day after the cast is applied with the patient standing erect to be certain that the weight does not fall upon the crushed forward portion of the vertebral body.

I cannot quite agree with Dr. Outland that these patients must be reduced and casted immediately. We prefer to keep them in bed for a few days, using a reversed Gatch spring or sandbag under the mattress to obtain extension, and then, when the soft tissues are a little less painful and danger of ileus is past, to apply the hyperextension body cast.

All of us have had these crush fractures brought to our attention late when very little can be done to relieve the patient's chronic backache. Vertebral fracture should be suspected after falls from a height, landing on the buttocks or in the jackknife position. Falls from a horse are another common cause.

We also take roentgen rays of the lumbar spine in all patients with fractures of the os calcis that are sustained by a fall upon the heels, and not infrequently an otherwise unsuspected fracture of a lumbar body is thereby disclosed.

SYMPOSIUM ON PYELITIS IN PREGNANCY

Treatment of Pyelitis in Pregnancy

EDWARD W. CAMPBELL, M.D.
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THE newer chemotherapeutic methods of treating urinary tract infections have added a new chapter to the treatment of pyelitis in pregnancy. Sufficient time has now elapsed to permit rational conclusions concerning their use and value, so that this symposium is very timely.

Sulfanilamide, sulfapyridine, sulfathiazole, and mandelic acid have been enthusiastically welcomed by the urologists, but they are by no means the final answer for the eradication of urinary tract infections. Although these drugs often prove startling in their beneficial effect, there remain certain fundamental rules to be followed in the treatment of urinary tract infections. These rules far outdate the newer chemotherapeutics, and have become even more essential because of the looseness with which the recent methods are used.

There is no reason for the routine prescription of any one of these drugs. Each drug is more effectively antagonistic to a certain group of organisms than the other and should be selected according to its individual sphere of lethal activity. An accurate determination, by cultures and subcultures, of the organism or organisms productive of the infection is more important today than ever, for it is by this means alone that the proper antiseptic can be selected. The possibility of dual infections must constantly be borne in mind, in which circumstance a drug may affect one organism and not the other, leaving a residual infection which would require further treatment. There are also certain physical states necessary for the optimal activity of the drugs the attainment of which may be the bridge between success and failure.

All of these are tricks which make the application of urinary antiseptics more effective. There is, however, one principle which is paramount for the successful use of urinary antiseptics. This is the ability of the infected kidney to excrete the drug in sufficient quantity to be bactericidal. The concentration of the drug in the urinary passageway is not dependent upon its concentration in the blood stream, but upon the capacity of the individual kidney to excrete the drug presented to it. Should the function of one kidney be retarded by infection, the drug will be excreted by its contralateral mate. If the function of both kidneys is decreased, the rate of excretion will be retarded with a concomitant reduction of the concentration of the drug in the infra-renal tract.

It might be argued that the pregnant woman has the advantage of urinary stasis to permit greater concentration of the antiseptic. This may be true as far as concentration of the drug is concerned, but it does not alter one of urology's fundamental laws, i. e., stasis breeds infection. It will be frequently noted that evidence of infection rapidly disappears from the urine after administering one of the aforementioned drugs, but the pyuria rapidly reappears after its withdrawal and negative cultures cannot be obtained until the ureteral obstruction is removed and free drainage of urine established.

The term "ureteral obstruction" has been used purposely, for it is still the belief of urologists that ureteral dilatation in the normal pregnant woman is primarily caused by obstruction. The degree of dilatation and tortuosity of the ureter may be accentuated by the atonic effect of hormones, but they cannot be considered as the entire cause of the physiologic phenomenon. Is it not reasonable to believe that if dilatation were entirely hormonal, the degree of ureteral enlargement should be bilaterally equal and should advance symmetrically during the various stages of pregnancy? This does not occur. Why should dilatation of the right ureter consistently precede that of the left, if it is not due to exposure of the right ureter to pressure from the enlarged uterus which causes early obstruc-

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tive changes, while the left is protected by the sigmoid which cushions the increased pressure?

This point may seem irrelevant, but on the contrary it is most important in that it places pyelitis in pregnancy in the category of an obstructive uropathy, and lends itself to the support of the use of the inlying catheter in the treatment of this disease. It is an accepted urologic practice that severe renal pelvic infections in pregnancy require immediate catheter drainage. The milder infections should be treated with antiseptics and postural drainage; if these are not effective within 48 to 72 hours, catheter drainage should be instituted to prevent further renal damage.

We have recently made a survey of 1288 obstetric patients which showed an incidence of pyelitis in 17 or 1.32 per cent. Of these 17 patients, 10 were effectively treated with sulfanilamide. Three patients who did not respond to sulfanilamide were relieved by inlying ureteral catheters. Four patients who presented severe infections were immediately placed on catheter drainage. The duration of catheter drainage depends on the individual case. In my experience it has varied from 48 hours to 6 weeks. Prolonged catheterization is possible with safety and comfort if the catheter is replaced every 5 to 7 days, and meticulous attention is paid to the placement and fixation of the catheter. The urine must be kept constantly acid and collected with the utmost cleanliness.

No attempt is made during pregnancy to eradicate the urinary tract infection completely, for it is not only uncomfortable for the patient but useless in the presence of urinary stasis. This phase of treatment must be energetically pursued during the postpartum period, and should begin with an intravenous urogram to be sure that renal function has returned and all obstruction to urine drainage has been relieved. The necessity for sterilization of the urinary tract cannot be too strongly emphasized, for residual infection precludes pyelitis in subsequent pregnancies, while sterilization of the urinary tract will permit repeated pregnancies without pyelitis.

The treatment of pyelitis of pregnancy may be summarized as follows:

1. Prophylactic treatment, which has not been mentioned, for the low incidence of this complication of pregnancy stands as a tribute to the obstetrician's prenatal care.
2. Medical treatment, which consists of postural drainage and chemotherapy. The effectiveness of this treatment depends on:
   a. Cultural identification of the organism or organisms causing the infection.
   b. Selection of the drug which has been found to be most antagonistic to the existing infection.
   c. Assurance of adequate renal function and competent drainage.
3. Surgical treatment, by which means drainage is obtained with the use of an inlying ureteral catheter.
4. Postpartum care, during which period existing foci of infection are removed and urinary tract pathology which may impede sterilization is repaired to prevent recurrent urinary tract infections.

Note: The discussion of the papers by Drs. Campbell and Kimbrough follows Dr. Kimbrough's paper.

AVOID OPERATIONS IN SPRING IS ADVICE TO SURGEONS

Avoid surgical operations in late winter and spring, if possible, Prof. William F. Petersen, of the University of Illinois College of Medicine, warned members of the American College of Surgeons.

The patient's resistance varies with the season, Prof. Petersen explained.

"If you will examine your hospital records," he said, "you will find that postoperative complications—shock, vascular accidents, and infection—occur more often in the late winter and spring. It is at this season that we are more often called upon to operate upon patients, because individuals are more often acutely ill. Avoiding unnecessary or interval operative intervention during this precarious season will help in lowering postoperative infection."

Chilling is also a danger, even if apparently insignificant, Prof. Petersen also warned, because it lowers the resistance to the passage of germs present on mucous membranes. The anesthetic itself entails heat loss from the body, he pointed out. A patient whose skin is covered with moist perspiration when exposed to even a minor draft is subject to undue heat loss.—*Science News Letter,* Nov. 2, 1940.

It is perhaps a tragedy for humanity that the destructive lesions of tuberculosis are not visible as they are in leprosy. The transmissibility of leprosy was recognized in biblical times and isolation of the afflicted was the rule then as it is even now. The old adage which says that "what one cannot see won't hurt" has served to protect the tubercle bacillus but not its host. While the proper attack upon the control of tuberculosis is something over 2000 years late, it finally has obtained a good start and promises to do in a few decades what has required centuries for leprosy.—David W. Heusinkveld, M.D., *Journal of Medicine,* November, 1940.

Pyelitis in Pregnancy

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Philadelphia, Pa.

CO-OPERATIVE studies such as we are undertaking today have, in recent years, resulted in marked advances in our understanding and treatment of many of the complications of pregnancy. This is particularly true of heart disease, tuberculosis, and syphilis, the maternal and fetal mortality from which have been greatly reduced.

By no means the least of these advances has been made in the field of the urologic complications, and I take this opportunity to express the gratitude of my obstetric colleagues to the urologists for their help in clarifying the pathogenesis and treatment of the urinary infections common to pregnancy.

In a series of cases reported from my service at the Pennsylvania Hospital by Herman and Mucklé in 1937, the incidence of pyelitis was 2.58 per cent in the course of 3481 consecutive obstetric admissions, ranking this condition in frequency along with heart disease and nephritis.

The term "pyelitis" as applied to this condition is hardly inclusive enough to cover the rather widespread pathologic changes, for in every case there is undoubtedly an associated ureteritis and, in many instances, a very definite inflammatory reaction in the renal parenchyma. It would therefore seem wiser to use the term pyelitis or pyelo-ureteritis for the milder forms of the disease and to bring into more common usage the term pyelonephritis to designate involvement of the kidney itself as evidenced by retention of nitrogenous substances in the blood. A clear-cut clinical differentiation seems important since the milder disease usually responds readily to treatment, while those patients with impaired renal function run a mortality risk of about 25 per cent.

Etiology

Physiologic loss of tonicity with eventual dilatation of the ureter gives rise to urinary stasis as early as the third month of pregnancy in some instances and is present to some degree in practically every case. Right lateral torsion of the pregnant uterus in all likelihood accounts for greater obstruction of the right ureter, and this probably is responsible for the higher incidence of right-sided infection. When one sees the large size of the ureter in late pregnancy and visualizes the tremendous stasis of urine, the reaction is one of amazement that so few pregnant women develop infection of the renal pelvis.

In our studies the colon bacillus is the responsible organism in fully 90 per cent of the acute cases. Its frequency, the proximity of the large bowel, and the fact that most patients with pyelitis are constipated lead one inevitably to the belief that extension from the large bowel by way of the lymphatics accounts for the presence of colon bacilli in the urinary tract. Undoubtedly micro-organisms utilize this pathway at all times, but in the absence of urinary stasis, infection does not usually occur. Conceivably, streptococci, staphylococci, and other organisms may reach the kidney by way of lymphatic drainage from the lower genital tract, particularly the cervix, but such extension, we feel, is relatively rare. Ascent of infection from the external genitalia and infection from the blood stream may occasionally occur.

In addition to these factors, the trauma of delivery plays a proven part in predisposing to postpartum infection as evidenced by the fact that the incidence of postpartum pyelitis in our cases was in direct proportion to the difficulty of operative delivery.

Clinical Course

The clinical features of pyelitis in pregnancy are so well known that I shall call attention to only a few outstanding points.

In a recent study of 90 cases we found that no etiologic significance could be attached to age, race, or parity. The highest incidence was late in the second and early in the third trimester of pregnancy. In the great majority the fever, costovertebral pain, and tenderness disappeared under conservative treatment, but almost routinely cultures of the urine remained positive throughout the remainder of pregnancy. In our

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Read before the Section on Urology of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

experience it is indeed rare to obtain a sterile urine before delivery.

In the more severe forms of pyelitis, especially those with bilateral infection or with nitrogenous retention, the course is more resistant and unless energetic measures are employed, the outcome may be fatal for the fetus or the mother or both.

Clinical Management and Treatment

On admission of a patient with suspected pyelitis, in addition to the usual routine studies, 3 special examinations are done—microscopic examination of a catheterized specimen of urine, culture of the urine, and determination of the nonprotein nitrogen content of the blood. Fortunately, the majority of patients respond within a very few days to a simple régime consisting of rest in bed, usually in Fowler's posture but with frequent changes of position to promote drainage, and forcing of fluids to at least 3000 c.c. daily. For no particularly good reason other than that it often relieves distressing bladder symptoms, the urine is rendered alkaline with sodium bicarbonate. We feel that mechanical flushing of the tract by a large urinary output is the most important feature of this conservative régime.

By the end of 48 hours well over one-half of our patients have either been relieved or have shown definite evidences of improvement. If at this time, however, the symptoms have not abated, we resort to that type of chemotherapy best suited to combat the responsible organism. Sulfanilamide in relatively moderate dosage (40 to 60 grams daily) has been most efficacious in combating the colon and streptococcic infections. Sulfathiazole in similar dosage has been used in a few cases of staphylococcic infection with encouraging results, but we are not yet prepared to give a more positive statement on its usefulness.

In the recent series of 90 cases, all but 9 patients responded to these conservative measures.

We have had no experience with the ketogenic diet nor with mandelic acid therapy during pregnancy because we have been unwilling to submit the fetus to such profound degrees of acidosis.

Should conservative therapy fail to control the course of the disease after a period of 4 or 5 days, we institute drainage with ureteral catheters. Dr. Leon Herman, urologist at the Pennsylvania Hospital, has been most co-operative in the treatment of these patients and I trust that in the discussion he will give you the technical details with which he is infinitely more familiar than I.

Both ureters are usually catheterized and the catheters are left in one or both ureters for a period of at least 48 hours. On several occasions catheters have remained in place for 5 days with no apparent deleterious effect. We feel that the advantage gained from constant drainage of infected urine more than compensates for any slight ureteral trauma. During the period of drainage the catheters are flushed with normal salt solution at intervals of 4 hours. By the end of 24 to 48 hours most patients respond well to this line of treatment, but drainage is continued until the temperature has been normal for at least a day. Failure to improve after several days of continuous drainage usually indicates either pre-existing renal lesions or a severe degree of pyelonephritis. Under these conditions, and particularly if there is retention of nitrogen products in the blood, immediate termination of pregnancy is imperative. The prompt amelioration of symptoms following evacuation of the uterus more than justifies this procedure in the treatment of a condition which carries with it such a high rate of maternal mortality.

After-Care

After the acute attack has subsided, one should bear in mind that the urine can rarely be made bacteria-free during the remainder of the pregnancy, and that recrudescence of the infection is by no means rare. Attention should be given to the anemia, constipation should be assiduously avoided, and at least 3000 c.c. of fluid should be taken daily. During the puerperium particularly, there is likely to be a lighting up of infection, as evidenced by the fact that almost 60 (58.8 per cent) of our patients who had ante partum pyelitis were also febrile from this condition after delivery. It is imperative that patients with pyelitis be followed carefully and treated until the urine cultures are sterile. Since 3 months is required for the urinary tract to return to normal after pregnancy, it is not at all unusual for the cultures to remain positive for this period. Persistence of infection longer than 3 months often signifies the existence of some underlying mechanical factor and strongly indicates a complete urologic survey.

ABSTRACT OF DISCUSSION

Leon Herman (Philadelphia): The essayists have covered the subject so thoroughly that I doubt if anything of importance can be added. These patients, as Dr. Kimbrough has stated, should be followed and treated until they are well, which means with sterile urinary tracts. The importance of this in the prevention of destructive upper urinary tract pathology cannot be overestimated.

My interest in pyelitis of pregnancy began in the Methodist Hospital many years ago. The first case I ever saw was a young woman who had been treated for typhoid fever for many weeks. She was brought to the hospital in the sixth month of her pregnancy, and was found to have advanced bilateral pyelitis. This patient wore indwelling catheters for 3 months, and was eventually delivered of a healthy baby.

In most instances the indwelling catheter serves to relieve the acute phases of the condition in several days. When prolonged drainage is necessary, the catheter should be changed weekly. It is impossible to sterilize the upper urinary tract of a pregnant woman as long as the product of conception remains in the uterus. The urologist's aid is sought when medical treatment has failed to alleviate the pyelitis. Dr. Kimbrough has given the indications for the latter, and the length of time that it should be continued.

There is a general misconception that cystoscopy promotes miscarriage. This is absolutely untrue. Miscarriages occur as a result of the toxemic effects on the fetus and on the uterine musculature. The fact is that miscarriages in severe pyelitis are much more frequent in patients treated palliatively than in those treated by catheter drainage. Urologists seem to differ as regards technical details. Personally, I advocate the use of No. 5 whistle tip ureteral catheters, which serve to drain the infected kidney adequately and inflict a minimum of trauma. To drain the kidney properly, it is essential to have the tip of the catheter placed in the true pelvis; otherwise it does far more harm than good. It is necessary, too, to be sure that the catheter does not become displaced. We disadvise the use of antiseptic irrigations of the infected kidney. If the catheter becomes plugged with foreign material, it should be irrigated with small quantities of warm saline solution. Patients who do not respond well, or who show unusual clinical signs, should be subjected to complete urologic studies. In most instances retrograde pyelography should not be done during the febrile stages of the disease.

Despite everything, a certain number of cases of pyelitis progress to a point where the life of the mother is endangered. In this event the uterus should be evacuated, and in some few instances this drastic measure must be adopted to save the kidneys serious, irreparable damage. It is under circumstances like these that consultation between the obstetrician and the urologist is so important. In a few serious cases in which evacuation of the uterus has been advised but refused for religious or other reasons, nephrostomy may be considered. This in rare cases is justifiable, and may prove to be a life-saving measure.

FRANCIS H. EATON (Philadelphia): Cystoscopy in pregnant women is somewhat more difficult than ordinary female urology because of the pressure on and the distortion of the bladder due to the pregnant uterus. One important reason why we do not get a better response to the urinary antiseptics in the pyelitis of pregnancy is because of the pressure on the ureters; the resulting hydronephrosis is so marked that urinary antiseptics cannot filter through the kidney. Oftentimes the indigo carmine will not be eliminated by one or both kidneys until a catheter has been inserted into the pelvis of the kidney to relieve this pressure. This is a very important point in the value of the indwelling ureteral catheter in this condition.

NEWLIN F. PAXSON (Philadelphia): From the obstetric viewpoint, I would emphasize that pyelitis develops about the time the pregnant uterus changes from a pelvic to an abdominal organ. When the abdominal support is poor, the uterus falls forward and distorts the ureters, causing obstruction. A maternity corset is of great advantage in these cases and will help to prevent obstruction.

When our patients are admitted to the hospital, they receive the following routine:

1. A culture is taken of the urine.
2. An intravenous urogram is made.
3. The foot of the bed is elevated.
4. The infection is treated by the use of drugs, usually sulfanilamide or mandelic acid (sulfanilamide seems to be the best).
5. After the infection is controlled, the ureters are catheterized to establish drainage.

I wish to emphasize the necessity of follow-up treatment after delivery. The management of a case is not completed until the patient has been studied 2 or 3 months after delivery.

DR. KIMBROUGH (in closing): I want to emphasize that we do not start urinary antiseptics immediately because we do not know what organism we have to combat. Mechanical flushing will take care of about one-half the cases without subjecting the fetus to the possibly harmful effects of chemotherapy. If the patient has not responded well to mechanical flushing at the end of 48 hours, we then have available the report on the urinary culture and proceed with appropriate chemotherapy. Investigation for nitrogenous retention early in the course of the disease is of great importance.

ABREAST OF MEDICAL PROGRESS

The editorial conferees are convinced from their preview of the contents of this issue of *The Pennsylvania Medical Journal* that its pages offer to the inquiring practitioner information and advice that will help to keep him abreast of many of the phases of successful practice even in these kaleidoscopic days marked by both therapeutic triumphs and patriotic responsibilities for the medical profession. Read the issue from cover to cover including our advertisers' pages and those of all contributors, reporters, and commentators, then forward to the *Journal* office your constructive criticisms and suggestions looking toward a *Journal* increasingly helpful to an increasing number of readers.

Calcium Therapy in Eye Diseases

ADOLPH KREBS, M.D.
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CALCIUM therapy has been employed many years, having first been recommended for the treatment of hemorrhage in 1891 because of its supposed power to increase the coagulability of the blood. This led to its use in ocular hemorrhage, but not until about 1913 did reports of its use in the treatment of eye diseases appear in the literature. Since that time, many writers, mostly European, have reported the results of calcium therapy on various kinds of eye diseases. It was first used with success for eczematous and scrofulous conditions; then favorable reports of its use in many other eye diseases appeared. These included vernal and hay fever conjunctivitis, phlyctenulosis, blepharitis, keratitis, episcleritis, iritis, uveitis, and also less promising ocular diseases such as glaucoma, sympathetic ophthalmitis, retinal detachment, and vitreous opacities. In most of these reports it was indicated that the oral administration of calcium had been employed. The irritating properties of the calcium salts then in use probably prevented a more extensive use of the therapy.

About 10 years ago the introduction of the less irritating gluconate resulted in a much wider employment of calcium therapy in diseases of the eye. My attention was called to the value of calcium in the treatment of acute and chronic uveitis by an article published in the *American Journal of Ophthalmology* in November, 1933, by Georgiana D. Theobald. By the use of calcium gluconate administered orally, intramuscularly, and intravenously, she obtained relief of pain, increased absorption of exudates with more rapid disappearance of posterior synechiae, and a shortening of the course of the inflammatory process. Encouraged by the favorable reports of Theobald and others, I began the use of calcium therapy in various types of eye diseases. As a result of the use of calcium for the past 7 years, I am convinced that its employment is of definite value in the treatment of certain diseases of the eye. This opinion has been arrived at as a result of clinical experience and largely through treatment in office practice.

Although the physiology and pharmacology of calcium is well understood, it is not definitely known how calcium acts in bringing about the changes in the ocular conditions that result from its use as a remedy. Calcium is necessary for the proper functions of the muscles, nerves, and glands of the body, for the proper clotting of the blood, and for imparting hardness and rigidity to the bones and fibrous structures. It is believed to decrease the permeability of the blood and lymph vessels, thereby lessening exudation; to have antispasmodic effect, thereby relieving pain; to aid in increasing blood coagulability, thereby checking and preventing hemorrhage; and to increase phagocytosis. Treatment by calcium may therefore find its rationale as a result of these properties.

Abnormal metabolism of calcium undoubtedly produces or predisposes to some obscure deviations from health that may exhibit their effects in certain eye diseases. The evaluation of calcium as a therapeutic agent is impossible since it is seldom used alone. Proper diet, correction of endocrine disturbances, removal of vitamin deficiencies, improvement of hygienic influences, and other local or systemic medication deserve some of the credit in bringing about recovery. However, recovery has not been as prompt, nor have the symptoms been controlled as quickly as when calcium therapy was employed.

Intramuscular injection of calcium gluconate has been the method of treatment that has been found most satisfactory. An injection of 10 c.c. of the 10 per cent solution is painless and seldom produces irritation. It may be given 2 or 3 times a day, but in office practice once daily is usually sufficient. In acute cases intravenous injections may be given for a more prompt effect. Patients with subacute or chronic disturbances are given one or two injections a week; some are given calcium once or twice a month over long periods of time with distinct benefit. Oral administration is employed where a chronic calcium deficiency exists or where the treatment by injection

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Read before the Section on Eye, Ear, Nose, and Throat Diseases of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

is not possible. When used orally, it is often given in insufficient dosage.

Three or four 60-grain doses of calcium gluconate must be given to adults where a relatively mild calcium effect is desired. When a definite deficiency exists, this must be supplemented by intravenous or intramuscular injections or by the addition of a high calcium diet, the effectiveness of which, as well as that of the calcium orally administered, is enhanced by the use of vitamins (especially D), viosterol, dihydrotachysterol, and by the use of acidifying salts such as ammonium chloride or dilute hydrochloric acid. Since absorption of calcium occurs best when the alkalinity of the upper intestine is lowest, oral administration is of most value either a half hour before or 4 hours after meals.

Other salts of calcium have been used. Calcium chloride can be given by mouth or intravenously, but not by muscular injection as it causes local tissue necrosis. Its oral administration is objectionable at times because of the unpleasant taste and gastric distress. Calcium lactate can be employed intravenously or by mouth, but it is also unsuited for intramuscular injection. It is an agreeable form for oral administration, being nonirritating and not unpalatable. Calcium levulinate is unsuited for oral use, but can be employed intravenously or intramuscularly. However, by the latter method it may cause pain and inflammation at the site of the injection.

Many types of ocular disease have been treated by the use of calcium within the past 7 years. In some, only symptomatic relief has been obtained; in others, cures resulted; in a small number of cases where calcium seemed to be indicated, it had no effect. In no case treated during that time has any harmful effect been observed from the use of calcium.

The diseases that seemed to respond best to calcium therapy were the following: Symptomatic relief was frequently obtained by those suffering from the itching, lacrimation, and other ocular discomforts of hay fever and allergy by a single injection of an ampule of calcium gluconate. Phlyctenulosis affecting the ocular conjunctiva responds rapidly to several daily injections. When the cornea is affected, recovery, while not as prompt, is just as certain. This effect is in remarkable contrast to the cases that were treated years ago when it was not unusual to have at least one intractable case of phlyctenular keratoconjunctivitis under treatment at all times. In children and adolescents whose physical condition is impaired the therapy has the added advantage of improving the general health.

Acute iritis, regardless of its etiology, responds remarkably well to calcium. Injections can be given at once and can be continued daily during the time needed to study the case. Its administration will not interfere with the etiologic investigations nor with the removal of such causes as are found. On the contrary, it has seemed to me that the reactions from such operations as the extraction of teeth, tonsillectomy, etc., were less violent where calcium had been used. The cases of acute iritis that were treated by calcium injections recovered more quickly than those that were treated by other methods. Pain was relieved promptly, sometimes being abolished by the first injection. The course of the inflammation was usually much shorter, the exudates being absorbed and the pupils dilating much faster than when mydriatics alone were used. Recurrent attacks have been less frequent.

Acute or recent cases of uveitis have been treated as successfully as acute iritis. Because of the absence of pain, they are usually not seen until the process is well advanced; treatment must therefore be carried on for a longer time, especially if an exudative choroiditis is also present. Although the effects of calcium are not as dramatic as in the treatment of acute iritis, nevertheless the results are fully as good as those obtained by other measures. In the treatment of chronic uveitis, calcium seems to be at least as useful as other forms of therapy. Shock therapy, tuberculin, gold, etc., have been tried from time to time, but none have proven superior to calcium. Patients who have received injections once or twice a month for several years have certainly remained in better health than those not receiving this treatment.

In the years previous to the employment of calcium, many eyes became phthisical and enucleation of painful phthisical eyes was not uncommon. Since the use of calcium, the treatment of these difficult cases has been more satisfactory and fewer phthisical eyes have been seen. Whether calcium therapy deserves the full credit for this, I do not know. It is possible that the resistance to all kinds of eye diseases has been greatly increased in recent years due to the fact that more favorable conditions prevail as a result of the advances in endocrine and vitamin therapy and a better understanding of nutritional deficiencies.

Calcium therapy is certainly indicated in progressive and high myopia. Undoubtedly a pathologic weakness of the sclera exists (Brana considered high myopia that had its origin in childhood "scleral rickets"). A. A. Knapp made a thorough study of this subject and concluded that "A disturbance of the vitamin D-calcium-phosphorus metabolism is concerned in the etiology of myopia. In the presence of a calcium imbalance, there may be a weakening of the fibrous tunic which may give rise to myopia." The treatment of these cases is as a rule unsatisfactory, as the co-operation of the patient is hard to obtain. Oral use of calcium and the employment of vitamin therapy have proved beneficial when the treatment was followed for a sufficient length of time.

Retinal hemorrhages seemed to absorb more quickly under calcium injections. A number of cases of recurrent retinal hemorrhage have been under treatment for several years, and I am convinced that calcium administration has prevented further recurrences. The treatment has been harmless, even in severe cases of diabetes and arteriosclerosis.

Calcium therapy has been of some value in the treatment of keratitis and episcleritis, and has been used for the treatment of keratoconus. A preoperative course of calcium injections has, I am sure, been of value in preventing postoperative reactions in some of our difficult cases of complicated cataract, glaucoma, and sympathetic ophthalmitis.

Calcium has not been proven of value in the treatment of vitreous opacities but has, I believe, hastened the absorption of blood in the vitreous when caused by trauma.

It has not been possible to compile exact statistics of the many cases treated. Results of a treatment such as this, combined as it is with numerous other kinds of therapy, do not lend themselves to critical analysis. Opinions regarding the value of calcium in the treatment of eye diseases can be formed only as a result of the impressions received by the practitioner who observes its effects upon various ocular conditions from day to day.

ABSTRACT OF DISCUSSION

David H. Shaffer (Pittsburgh): It is difficult to evaluate any therapeutic agent that is not an absolute specific, inasmuch as our most conservative estimate is apt to be colored by wishful thinking. In the matter of calcium therapy, however, a careful check on many cases of uveitis and exudative choroiditis of suspected tuberculous origin, in a majority of which the calcium level was found to be low, it has been possible in every case to raise the calcium level to normal in a short time by intramuscular injections of calcium with accompanying clinical improvement in every case. Nodules on the iris rim and deposits on Descemet's membrane melt away much quicker under its use.

In iritis of other than syphilitic origin the use of calcium has never failed to relieve pain and to free iris adhesions, though some synechiae may occasionally remain. Retinal hemorrhages certainly disappear more quickly under calcium therapy and we feel that it is of value in preventing further vascular accidents. Most patients have a definite feeling of well-being under the use of this agent, and it has been possible in most cases, after the level has been raised to normal, to maintain it by occasional injections of 10 c.c.

Iritis is definitely less likely to recur where the calcium level has been maintained, and many cases of phthisis bulbi, which have had the usual habit of flaring up, have been maintained without exacerbations through several years.

Calcium gluconate (10 per cent solution) in doses of 10 c.c. intramuscularly has been used in all cases, and it is a specific in relieving the itchiness of vernal conjunctivitis and of other allergic affections of the conjunctiva. In no case—and at least 5000 injections have been given—has there been the slightest subjective symptom except, perhaps, a little local soreness. In acute cases it is our usual practice to use it daily for 7 to 10 injections, tapering off as the symptoms abate. The favorite sites are the triceps or the anterior surface of the thigh and a three-quarter inch 24-gauge platinum needle is always used. Both sites tolerate this dosage no matter how long continued and the small needle causes no pain.

I have emphasized the size of the needle and the sites of injection because it makes a much easier and quicker office procedure than if the gluteal region is selected and the larger needle used.

AMERICAN ACADEMY OF PHYSICAL MEDICINE

The American Academy of Physical Medicine will hold its nineteenth annual meeting and scientific session on Apr. 28, 29, and 30, 1941, in New York, with headquarters at the Hotel Pennsylvania, where lectures, symposia, clinical papers, motion pictures, and the exhibits will be presented. Clinics will be held at the Medical Center, New York Orthopedic Hospital, Postgraduate Hospital, and the Skin and Cancer Hospital. There will be an evening session at the Academy of Medicine building and a banquet at the Hotel Pennsylvania.

Physical medicine in relation to general medicine and the specialties will be the underlying theme of the topics under discussion. These include new developments in electrotherapy, electrosurgery, radiation therapy, hydrology, physical education, military medicine, aviation medicine, and laboratory reports on related investigation.

The sessions are under the direction of Harold D. Corbusier, M.D., Plainfield, N. J., president; Herman A. Osgood, M.D., Boston, secretary; Fred H. Albee, M.D., New York, chairman of the Committee on Arrangements; William D. McFee, M.D., Boston, chairman of the Committee on Program; William Benham Snow, M.D., New York, chairman of the Committee on Clinics; and Franklin P. Lowry, M.D., Newton, Mass., chairman of the Committee on Exhibits.

All members of the medical profession and those of related interests are invited to attend the scientific program. There will be no registration fee. Address inquiries to Herman A. Osgood, M.D., Secretary, 144 Commonwealth Avenue, Boston, Mass.

Various Organic Nervous Disorders Erroneously Diagnosed Anterior Poliomyelitis

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THE clinical picture of anterior poliomyelitis in both its early and late stages may be simulated by numerous other diseases. J. E. Gordon noted that out of 446 patients admitted to the Herman Kiefer Hospital with the diagnosis of poliomyelitis, only one-half were confirmed by clinical study and laboratory investigation. He lists 50 conditions which were mistaken for poliomyelitis.

In this paper we wish to report on a group of patients who were admitted to the Philadelphia Hospital for Contagious Diseases as suspected cases of poliomyelitis, which upon further study disclosed various other etiologies. Most of our case reports emphasize the importance of not only recognizing the typical and atypical forms of poliomyelitis but also stress the value of familiarizing one's self with some of the atypical forms of various other diseases. A short résumé of several cases will be given which will illustrate some of the more distinguishing features in the differential diagnosis.

Material

This group consists of 31 patients among 315 admitted as poliomyelitis suspects during the years of 1933, 1935, 1938, 1939, to September, 1940. Of the 31 cases, 18 were studied in 1939 when 184 patients were admitted. The total admission of 315 included 67 cases classified as poliomyelitis, although the clinical picture simulated encephalitis, meningismus, aseptic meningitis, and acute lymphocytic choriomeningitis. We have not included these 67 patients in our group since they formed the basis of a paper by one of us (P. F. L.) in 1935.

Meningeal and Encephalitic Syndromes (Table I)

A case of encephalitis was mistaken for poliomyelitis chiefly because of a flaccid paralysis of one side of the body which followed an upper respiratory infection. The absence of spinal fluid changes and the subsequent course with drowsiness, prolonged fever, and neurologic signs of a focal lesion in the brain were the main features in favor of an encephalitic process. In the 2 instances of tuberculous meningitis, the onset with headache, fever, stiff neck, ataxia, as well as the alteration in the spinal fluid, were indistinguishable from poliomyelitis. However, with the progression of the disease, the clinical picture of increased intracranial pressure, decerebrate rigidity with tonic fits, and the Magnus de Kleijn reflexes conformed with the characteristic picture of tuberculous meningitis. The spinal fluid in this disease shows other variations from that of poliomyelitis in that the pleocytosis is more marked, the chlorides are diminished, the globulin content is greater, sugar reduction is markedly diminished, and a pellicle is generally present when the fluid is allowed to stand.

In another case, a girl of 11 years, the clinical picture of fever, headache, stiff neck, and a flaccid paresis of the right upper and lower extremities suggested poliomyelitis. However, the history of a sudden onset with a severe thumping type of pain in the head, which immediately preceded the other symptoms, and the finding of bloody spinal fluid indicated a subarachnoid hemorrhage possibly due to a ruptured aneurysm. After about 6 such attacks the patient finally succumbed.

There were 3 cases of neurosyphilis in which the onset and clinical picture simulated poliomyelitis. The patient with juvenile paresis had the usual characteristic signs of the disease, such as the Argyll-Robertson pupils, reflex changes, mental symptoms, and positive blood and spinal Wassermann reactions. As for the patient with meningomyelitis, the blood Wassermann reaction was negative, but the spinal Wassermann reaction was positive. Clinically, there were signs of a flaccid paresis of the lower extremities asso-

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Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

TABLE I

MENINGO-ENCEPHALITIC SYNDROMES MISTAKEN FOR POLIOMYELITIS

Case	*Age*	*Sex*	*Date*	*Diagnosis*	*Signs and Course*	*Spinal Fluid* *Cells per cu. mm.*	*Globulin*
1.	13 mo.	F	9/8/35	Tuberculous meningitis	Fever, vomiting, stiff neck; later, decerebrate rigidity, tonic fits, Babinski positive	165 98% lymphocytes	+++
2.	5 yr.	F	1/22/40	Tuberculous meningitis	Headache, vomiting, convulsions, stupor, stiff neck, meningeal signs, decerebrate rigidity, bilateral Babinski	132 93% lymphocytes	+
3.	4 yr.	F	2/2/38	Purulent meningitis (brain abscess)	Otitis media followed by progressive paralysis (flaccid) with sensory loss of right side of body; meningeal signs, Babinski positive	1800 85% polymorphonuclears	+
4.	4 yr.	M	7/11/39	Encephalomyelitis (post varicella)	Attacks of chickenpox followed by diffuse flaccid paralysis of extremities	1 223331000	+
5.	10 yr.	M	9/8/35	Acute rheumatic encephalitis	Upper respiratory infection, drowsiness, prolonged fever, right flaccid hemiplegia, cortical sensory loss	3	+
6.	12 yr.	F	2/7/40	Acute syphilitic meningo-encephalitis	Fever, headache, meningeal signs, loss of tendon reflexes, pupils fixed to light stimulation	129 94% lymphocytes	+
7.	9 yr.	F	10/16/39	Juvenile tabo-paresis	Fever, malaise, pain and stiffness, weakness in extremities, psychotic symptoms, A. R. pupils, ataxic gait	86 100% lymphocytes Wassermann 4	+
8.	21 yr.	F	12/23/39	Syphilitic meningomyelitis	Headache, chills, fever, pains in neck and extremities, weakness in both lower limbs, sensory changes, reflexes active, Oppenheim sign	Wassermann 4 2233321000	+
9.	10 yr.	F	2/28/40	Spontaneous subarachnoid hemorrhage (aneurysm of basilar artery)	Violent headache, vomiting, fever, nuchal rigidity, sixth and seventh cranial nerves on left, with flaccid paralysis of right arm and leg	Bloody fluid	+

ciated with upper motor neurone involvement. The third patient of this group brought up the question of differential diagnosis in such conditions as nonparalytic poliomyelitis, lymphocytic choriomeningitis, and syphilitic meningo-encephalitis. The girl, age 11, developed headache, vomiting, drowsiness, pain and stiffness in the neck, and weakness of the right leg. There was increased tension in the muscles of the neck, mild Kernig sign, 196 cells in the spinal fluid with 80 per cent lymphocytes and a colloidal gold curve of 344321000. Such a clinical picture occurring during the seasonal prevalence of poliomyelitis certainly would suggest the nonparalytic form of this disease. By a process of elimination, acute lymphocytic choriomeningitis was strongly considered. However, the findings of fixed pupils to light stimulation, unequal loss in the deep reflexes, and a history of an untreated syphilis in the father were facts in favor of syphilitic etiology.

Nervous Disorders with Paralytic Phenomena (Table II)

Acute Transverse Lesions of the Spinal Cord.—Three of the patients of this group were classified as acute myelitis; there was one abscess of the cord, and one spinal cord tumor. Of the myelitic cases, 2 occurred in the months of January and February, while the other occurred in June. The ages of the patients were 7, 14, and 19 years respectively. The first case was a girl, age 19, in whom there suddenly developed headache, fever, stiffness of the neck, and symptoms of upper respiratory infection. Within 3 days there appeared an ascending flaccid paralysis of both lower extremities reaching to the extensors of both forearms, but not including the flexors. The deep reflexes in the lower limbs were absent. In the upper limbs the triceps reflex was absent bilaterally, while the biceps reflex was present. Hoffman and Babinski signs were not obtained. There was a complete loss of all forms of sensation with the exception of tactile up to the level of the seventh cervical segment. Bowel and bladder functions were lost. The spinal fluid cell count was normal.

It is easily seen how confusion would be most likely to arise in mistaking this syndrome for poliomyelitis and Landry's disease. The sensory disturbances of a level lesion, however, excluded both of these conditions.

In the other 2 cases the onset and clinical course were similar. In addition to the sensory loss, a Babinski sign and other signs of pyramidal tract disturbance were evident; the level of involvement was C 6 in the second case, and C 7 in the third case. In one patient the condi-

TABLE II

NEUROLOGIC DISORDERS WITH PARALYSIS

						Spinal Fluid	
Case	*Age*	*Sex*	*Date*	*Diagnosis*	*Signs and Course*	*Cells*	*Globulin*
10.	19 yr.	F	1/7/38	Transverse myelitis	Headache, stiff neck, upper respiratory infection, ascending quadriplegia, sensory loss with level C 6, bowel and bladder loss	2	+
11.	7 yr.	M	2/2/38	Transverse myelitis	Progressive flaccid motor and sensory paralysis		Faint haze
12.	14 yr.	F	6/11/38	Transverse myelitis	Cervical adenitis followed by progressive flaccid quadriplegia with sensory loss C 6; fever 7 days' duration; Babinski	6	+
13.	6 yr.	M		Abscess of the spinal cord	Pain in epigastrium, vomiting, rigidity of neck, paraplegia with sensory loss		
14.	4 yr.	F		Tumor of the spinal cord	Empyema with progressive paralysis of both lower limbs with sensory loss at level up to D 5	38 80% lymphocytes Queckenstedt positive	+
15.	41 yr.	M	9/8/37	Alcoholic polyneuritis	Headache, fever, pain in spine and extremities, progressive paralysis, sensory loss	0	Negative
16.	52 yr.	M	9/19/37	Alcoholic polyneuritis	Headache, fever, progressive quadriplegia	0	Negative
17.	31 yr.	M	9/19/39	Infectious neuronitis (Gillaine-Barré)	Headache, prolonged fever 101-103 F., progressive quadriplegia with bilateral facial paralysis	6	++++
18.	21 yr.	M	11/27/33	Infectious neuronitis (Gillaine-Barré)	Fever, headache, gradual progressive quadriplegia, flaccid paralysis	20 90% polymorphonuclears	+++
19.	8 yr.	M	8/19/38	Chorea paralytica	Headache, vomiting, pain in legs, limp paralysis of right arm, weakness in extremities, choreiform movements	3	Negative
20.	6 yr.	F	7/8/37	Chorea paralytica	Fever, headache, stiff neck, limp paralysis of left arm, choreiform movements of face and hands	7	Negative
21.	11 yr.		8/19/40	Chorea paralytica	Headache, fever, limp in right arm and both lower limbs, grimacing, twitchings, flaccid diminution	0	Negative
22.	11 yr.		8/31/39	Family periodic paralysis	Rapidly developing quadriplegia with complete recovery, absent reflexes, flaccid paralysis	0	Negative
23.	10 yr.		11/25/39	Tumor of brain stem	Fever, stupor, progressive paralysis of extremities, fifth, sixth, and seventh cranial nerves on right, decerebrate posture; Magnus	0	Faint trace
24.	13 yr.	F	9/3/38	Brain tumor (parietal lobe)	Fever, headache, progressive weakness of right arm and leg with astereognosis, sensory changes, and wasting of muscles; Babinski		Faint trace

tion followed a tonsillectomy, while the other was associated with a cervical adenitis.

In the case of an abscess of the spinal cord, a boy, age 6, suffering from an empyema, rapidly developed a progressive flaccid paralysis of both lower extremities with absence of the deep reflexes. The sensory loss with a level at the fifth thoracic segment, and a positive Queckenstedt test, indicating a spinal block, were evidences of a focal "space occupying" lesion.

Although tumors of the spinal cord are particularly rare in children and seldom of sudden onset, the following case is especially interesting and unusual:

There suddenly developed in a girl, age 4, pain in the epigastrium which was soon followed by headache, vomiting, drowsiness, rigidity of the spine, and within 24 hours a weakness in both legs. Lumbar puncture revealed bloody spinal fluid. On admission to the hospital, 8 days after the onset, there was flaccid paralysis of the right leg and weakness of the left; the deep reflexes were absent and rigidity of the neck was marked. The temperature remained elevated for more than 10 days of the illness. Lumbar puncture prior to admission revealed bloody fluid and at the hospital xanthochromic fluid was obtained. The Queckenstedt test was positive for block in the spinal canal.

The clinical picture in this case resembled poliomyelitis so closely that this diagnosis was made at a teaching institution after thorough neurologic studies had been carried out. The meningeal signs and fever in all probability were due to a subarachnoid hemorrhage resulting from an escape of blood into the subarachnoid space.

Polyneuritic Syndrome.—There were 4 cases of this syndrome which simulated the polyneuritic form of poliomyelitis. There were 2 patients with alcoholic polyneuritis in whom the condition began suddenly with headache, fever, pains, and weakness of the extremities strongly suggestive of poliomyelitis. Against the latter diagnosis, however, was the gradual progression of the paralysis, accompanied by severe pain, sensory disturbances limited to the distal portions of the extremities, extreme nerve tenderness, and normal cell count in the spinal fluid.

In the other 2 cases of this group the etiologic factor was of an infectious nature. In one, a young man, age 22, there occurred a rapidly progressive flaccid paralysis of all the extremities including the facial muscles on both sides. The significant feature here was the albuminocytologic dissociation in the spinal fluid (the high protein content with little increase in the cells), a finding which has been stressed as indicative of a special form of polyneuritis. Some writers have also classified this picture under the term of infectious neuronitis. The difficulty in distinguishing this disease from poliomyelitis is well brought out by the following case:

A refugee, age 31, developed a rapid progressive weakness in all the extremities, following symptoms of an upper respiratory infection. A diagnosis of poliomyelitis was made by a neurologist at a hospital and the patient was transferred to our hospital where his condition was considered by all to be characteristic of the disease. Upon returning to the former hospital, one of us (A. S.) noticed that the paralysis had been progressing for a period of 2 months, and the paralysis as well as the sensory loss were characteristic of a polyneuritis.

Here again, as in the previous case, the spinal fluid cell count was increased very little (18 cells) as compared to the large increase in globulin. Based on these findings, a diagnosis of neuronitis, or the Gillaine-Barré type of polyneuritis was ventured and a good prognosis was predicted. Within 10 months the patient made a satisfactory recovery.

Family Periodic Paralysis.—This rare condition may be mistaken for typical poliomyelitis and prove extremely puzzling unless one is acquainted with the syndrome. An Italian boy, age 9, was admitted to the hospital with the history of a sudden, rapidly developing paralysis of the lower extremities. When examined several hours after the onset, there was complete flaccid paralysis of both lower extremities and marked weakness of both upper limbs, including the shoulders. The deep reflexes were greatly diminished in the left upper limb, otherwise unaffected. The spinal fluid cell count was normal. The following day after admission the patient was found to be sitting up in bed apparently quite comfortable. All signs of the paralysis had disappeared. The dramatic recovery was so unexpected and confusing that the question of hysteria was brought up for consideration. However, the clinical picture proved quite typical of periodic paralysis, the patient having had 2 similar attacks previously.

Although a patient at the height of an attack of periodic paralysis may simulate a so-called typical full-blown poliomyelitis, there are certain characteristics of the disease that are peculiar to itself. For example, the onset is much more rapid than in poliomyelitis and is unaccompanied by fever or other signs of infection. The attack frequently comes on at night without any prodromes and may be relatively transient, or again it may persist for 24 hours or more. It begins with a rapidly progressive ascending flaccid paralysis involving the lower and upper extremities. The deep reflexes may be diminished or lost, sensibility is intact, and there may be a diminution or even loss in the electrical responses. Lumbar puncture is negative. The condition usually occurs in young people and as a rule several members of a family are affected. After an attack the patient appears perfectly well as though nothing unusual had occurred, although there are reports that some patients have died during a seizure. The attacks may come on weekly or at irregular intervals several times a year. Although little is known of the disease, the recent work of Gammon and his coworkers strongly suggests that the attacks are associated with a fall in potassium in the blood serum, and on this basis it has been found that potassium salts administered by mouth can prevent an attack as well as effect a cure.

Paralytic Chorea (Chorea Mollis or Limp Chorea).—There were 3 cases of this rare form of chorea which simulated poliomyelitis. Curiously enough, in every instance the patient had been studied previously at another hospital. The first patient, a girl, age 6, was admitted to the hospital in July, 1937, as a typical case of poliomyelitis because of the acute onset with fever, pains, and stiff neck, which was followed by a limp paralysis of the left arm. During her stay at the hospital there developed grimacing and twitching movements in the face and extremities. The second patient had a similar acute onset with a limp paralysis of the right arm. In the third patient the limp paralysis affected the right upper limb and also both lower limbs.

The fact that acute chorea may occasionally begin with paralysis without any perceptible spasm is worthy of emphasis. As a rule, the loss of power is never complete, the loss in the use of the affected limb being out of all proportion to the muscular weakness. One of the upper extremities is usually affected. There may be, although rarely, weakness in the legs for a time. Slight twitchings of the muscles may occur at the onset and cease, leaving the weakness. However, more commonly, as in our 3 patients, the loss of power is the first symptom, the abnormal movements appearing later in the disease. The musculature remains of normal volume, the reflexes though depressed are usually preserved, and the electrical reactions remain unchanged. Gowers' interesting statement in this connection is pertinent. He states, "As a rule, when a child between 7 and 12 years of age is said to have gradually lost the use of one arm, the disease is chorea."

Space-Occupying Lesions of the Brain.—In this group there were 2 patients with tumors and one with an abscess of the brain. The first patient was a boy, age 3, who suddenly began to limp with the right leg. A progressive weakness of the upper extremities developed together with an inability to keep the head erect. When admitted to the hospital 3 weeks after the onset, the child was stuporous; the temperature was elevated, varying between 99 and 105 F. The important neurologic signs were decerebrate rigidity and paralysis of the abducens, facial, and motor divisions of the trigeminus on the right side—a group of signs indicating a focal lesion in the brain stem. At necropsy the tumor proved to be an extensive medulloblastoma reaching from the lower part of the medulla to above the superior colliculus. Interestingly enough in spite of the tremendous size of the growth, the usual signs of increased intracranial pressure were lacking. The persistence of the elevated temperature in this case should be particularly noted.

The second case in this group is instructive because it emphasizes the difficulties encountered in differentiating the paralysis of poliomyelitis from that due to a cerebral lesion. Textbooks would lead one to believe that the distinction between the 2 types is a relatively simple matter.

In a girl, age 13, there developed headache, fever, and on the third day of the illness a weakness of the right side of the body. This gradually progressed to an incomplete flaccid hemiparesis on the eighth day of the disease when she was admitted to the hospital as a suspected case of poliomyelitis. Within a few days the condition rapidly progressed to almost a complete flaccid paralysis with sensory loss, astereognosis, and wasting of the extremities—a group of signs indicating a lesion in the left parieto-motor area, which subsequently proved to be a glioma.

In this case the seasonal incidence, onset, and early clinical picture simulated poliomyelitis very closely. Indeed, the flaccidity and wasting of the muscles are 2 signs that textbooks emphasize as characteristic of anterior horn cell disease in contrast to the spastic paralysis without muscle wasting that is due to cerebral lesions. That our case is not an isolated instance where a cerebral lesion may be mistaken for a spinal cord lesion is further illustrated by the 2 other patients in our series. In each instance the flaccidity and wasting of the paralyzed extremities were the confusing signs that lead to the erroneous diagnosis of poliomyelitis. One patient had an abscess in the right parieto-motor area which produced a rapidly progressive flaccid hemiplegia, cortical sensory loss, and vasomotor and trophic changes on the left side of the body. The other patient had encephalitis. In addition to somnolence and prolonged fever, there was a right-sided flaccid amyotrophy with sensory loss. The fact that flaccid paralysis and atrophy, contrary to the classical teaching, are not infrequent signs in cerebral lesions is worthy of emphasis. These signs in all probability are due to an injury of certain areas in the brain. J. F. Fulton demonstrated in animals that an injury to area 4 of Brodman (anterior to the Rolando fissure) results in a flaccid paralysis, while an injury to area 6 (premotor) causes a spastic paralysis. One of us (A. S.) in several presentations has attempted to show that the wasting or amyotrophy of cerebral origin may be considered as an important sign of involvement of the parietal lobe.

Miscellaneous Disorders (Table III)

This group consists of various infections and diseases not directly related to disorders of the nervous system which simulated poliomyelitis. One case of rheumatic fever was mistaken for poliomyelitis because of the acute onset with fever, pains, hyperesthesia in the extremities, and an apparent paralysis of the extremities. In this condition there is a more protracted febrile course, no paralysis or reflex changes, and no alteration in the spinal fluid.

Myositis.—A girl, age 9, developed headache, pain, and marked weakness in the extremities following unusual muscular exertion by skipping a rope more than 500 consecutive times. The apparent paralysis in this patient as in the previous one was caused by an attempt to secure relief from the painful muscles.

Respiratory Disease.—There were 2 patients with upper respiratory infections which were mistaken for poliomyelitis. The normal spinal fluid findings associated with the meningeal syndrome ruled out poliomyelitis.

Pelvic Inflammatory Disease.—A female, age 21, developed fever, vomiting, pain in the back, and stiff neck. On examination she had what was interpreted as a typical "spine sign," which in the light of the onset was considered as suspicious of a preparalytic poliomyelitis. However, pelvic examination revealed acute tubo-ovarian disease of Neisserian origin.

Pyemia.—This was a most unusual case of a boy, age 18, in whom there suddenly developed fever, malaise, stiff neck, rigid spine, and weakness of all the extremities. This was soon followed by respiratory difficulty necessitating his being placed in a Drinker respirator shortly after his admission.

Although the diagnosis of a bulbo-spinal poliomyelitis appeared quite obvious due to marked respiratory difficulty, there were certain other findings that caused one to suspect another etiology. For example, the weak voice apparently was not due to a paralysis of the vocal cords, the swallowing function was unaffected, and the gag reflex was present. Furthermore, although the extreme weakness in all the extremities was marked, there was no definite paralysis of any muscle group, and the deep reflexes were preserved. These findings together with no alterations in the spinal fluid, as well as the absence of the seasonal factor, were considered to be

Table III

Miscellaneous Disorders

Case	*Age*	*Sex*	*Date*	*Diagnosis*	*Signs and course*	*Spinal Fluid*	
						Cells	*Globulin*
25.	24 yr.	F	10/12/39	Pelvic inflammatory disease (gonococcic)	Vomiting, fever, pain in back, false "spine sign"	3	Faint haze
26.	5 yr.	M	2/1/39	Rheumatic fever	Fever, stiff neck, pain in both legs with weakness	3	Negative
27.	9 yr.	F	4/11/40	Myositis	Headache, pain and weakness of legs	3	Negative
28.	18 yr.	M	6/14/40	Staphylococcic pyemia with metastatic abscesses (lungs, liver, spleen, heart, muscles)	Fever, stiff neck, rigid spine, weakness of all extremities, respiratory collapse	0	Negative
29.	36 yr.	M	8/25/39	Upper respiratory infection	Fever, nuchal rigidity, meningeal signs	7	Negative
30.	11 yr.	M	8/10/40	Lobar pneumonia	Headache, fever, pain in back, delirium, pneumonic consideration	1	Negative
31.	21 yr.	F	9/17/40	Malaria	Headache, fever, backache, weakness of all extremities	0	Negative

against the diagnosis of poliomyelitis. At necropsy a staphylococcic pyemia with metastatic abscesses in the lungs, liver, kidney, and muscles was found. The condition was believed to have resulted from the picking of a pimple on the face.

Comment

In reviewing the cases in this series, it will be readily seen that each case presented some symptoms and signs which strongly suggested poliomyelitis. A striking feature of our group is the low incidence of patients with upper respiratory infection, gastro-intestinal upset, and meningitic syndromes, which, as a rule, form the bulk of the diseases that are usually mistaken for poliomyelitis.

In the majority of instances the diagnosis of poliomyelitis was reached only after a study of all the factors in the case. Great emphasis was placed on a careful history. This was followed by complete physical and neurologic examinations and an interpretation of the laboratory findings. The seasonal factor was considered to be important; that is, cases suspected of poliomyelitis during the winter and spring months were looked upon dubiously until all other possible conditions had been ruled out.

A positive diagnosis of the typical case of poliomyelitis can be made with little difficulty. Here, the sudden onset with fever, vomiting, diarrhea, or upper respiratory infection (phase of general infection) is followed by headache, stiff neck, pain in the extremities, especially the neck and back, tremor, prostration, apprehension, coated tongue (which may frequently have a glazed or parchment-like appearance), flushed face, drowsiness, and pleocytosis in the spinal fluid (phase of subarachnoid invasion or preparalytic stage). Such a clinical picture occurring during the seasonal prevalence of poliomyelitis would warrant the latter diagnosis. With this picture, the sudden appearance of a flaccid paralysis on the third or fifth day of the illness (the paralytic stage) would point to poliomyelitis without peradventure of a doubt. However, the clinical course of the disease may be altogether different.

Instead of a fever lasting only a few days, it may persist for as long as 2 weeks, or the cause will be entirely afebrile. Further, the various stages of the disease may be altogether absent. In the majority of instances the condition may not advance to the paralytic stage at all, or the paralysis will be the first and only sign of the disease. Any of the characteristic symptoms and signs may become exaggerated to such an extent as to form special types of the disease. For example, the pain and tenderness in the muscles can be so pronounced as to resemble neuritis, thus giving rise to the polyneuritic type, or the meningeal signs may dominate the clinical picture and thus give rise to the meningitic type, etc. It is with these special types that difficulty is encountered in distinguishing them from other neurologic syndromes.

Our series of cases fall into 2 main groups: (1) nervous disorders presenting mainly a meningitic or encephalitic syndrome; and (2) nervous disorders consisting chiefly of a paralytic syndrome. The greatest difficulty in diagnosis occurs when it becomes necessary to distinguish the preparalytic and nonparalytic forms of poliomyelitis from the numerous other diseases producing signs of meningeal irritation. It is in this group that examination of the cerebrospinal fluid will be of invaluable aid in ruling out the numerous systemic diseases unrelated to disorders of the nervous system, as well as reveal the true nature of the disease in meningitis. Lumbar puncture will also be of inestimable value in the diagnosis of subarachnoid hemorrhage, as was well demonstrated in one of our cases.

The cell count in the spinal fluid in poliomyelitis ranges from 30 to 300 with polymorphonuclear forms predominating in the early stage, changing in a few days to a lymphocytosis. Although alteration in the spinal fluid is of great diagnostic significance, it is not specific nor pathognomonic of the disease. It is of value only when considered in the light of all the other factors in the case. The close similarity of the early clinical picture of tuberculous meningitis with poliomyelitis was well demonstrated in 2 of our cases. The clinical course of increased intracranial pressure with a decerebrate picture seems quite characteristic of this disease. The interesting feature in our 3 cases of neurosyphilis was the acute onset with headache, fever, pain in the neck, and weakness in the extremities. The neurologic findings of loss in the pupillary light response, reflex changes, were important features calling attention to the syphilitic etiology.

That the spinal fluid findings as well as the clinical picture of nonparalytic poliomyelitis may be indistinguishable from epidemic meningo-encephalitis, aseptic meningitis, epidemic serous meningitis, or lymphocytic choriomeningitis, as pointed out by one of us (P. F. L.) in 1935, is a point worthy of emphasis.

There is quite a variety of diseases with paralytic phenomena in our series which were mistaken for the fully developed paralytic stage of poliomyelitis. That paralysis may be simulated by abnormal conditions in the bones, joints, and muscles has been well emphasized in the literature and also demonstrated in 2 of our cases. Careful examination of our patients disclosed that it was the pain and not the weakness which was responsible for the failure to move the affected extremity.

Transverse lesions of the spinal cord due to transverse myelitis, abscess, or tumor may simulate poliomyelitis by the flaccid paralysis and loss in the tendon reflexes. In these cases, however, the sensory changes with a segmental level and bladder and bowel disturbances rule out poliomyelitis. A positive Queckenstedt test indicating a spinal block is often present in "space occupying" lesions such as tumor or abscess. That multiple neuritis and polyneuritic syndromes can readily be mistaken for poliomyelitis was well demonstrated by several of our cases. The history of chronic alcoholism, contact with heavy metals, vitamin deficiency, or a history of a recent attack of diphtheria in children are of utmost importance. The onset is usually more gradual than in poliomyelitis, the paralysis occurs later in the disease, and the maximum stage of the paralytic involvement is reached more slowly. The slow course, the pains in the extremities, and the objective sensory disturbances, with a more or less symmetrical peripheral distribution, are the main points in characterizing these conditions. In neuronitis, of the Gillaine-Barré type of polyneuritis, albuminocytologic dissociation in the spinal fluid (a marked increase in total protein with very little or no increase in cells) has been considered an important diagnostic feature of the disease.

The fact that chorea in its atypical form, the so-called paralytic chorea (chorea mollis), may be mistaken for poliomyelitis was strikingly emphasized in 3 of our patients. A history of attacks of tonsillitis, heart disease, or rheumatic fever, with careful examination of the paralytic limbs by raising them above the head of the patient for evidence of twitchings, should aid in detecting this condition. It is to be emphasized that this disease may begin with a flaccid weakness which may persist for some time before twitching movements are manifested.

Family periodic paralysis is another disease which at the peak of the attack may simulate poliomyelitis. The familial tendency with sudden onset of flaccid paralysis and dramatic, complete restitution to normalcy in about 24 hours are the characteristic features of the disease. Confusion with hysteria in these cases is to be carefully avoided.

The most interesting group of cases which were mistaken for poliomyelitis consists of brain lesions such as cerebral tumor, cerebral abscess, encephalitis, tumor of the brain stem, and hemorrhagic lesion in the pons. These intracranial lesions have always been considered to have characteristic features distinguishing them from the lower motor neuron type of paralysis, such as poliomyelitis. In the 3 cerebral lesions the syndrome consisted of a flaccid or hypotonic paralysis of one side of the body including a mild weakness of the lower side of the face, associated with sensory disturbances including astereognosis, vasomotor changes in the form of cold, pale skin, and wasting in the muscles, usually in the hands and shoulders (a group of symptoms that we believe are characteristic of involvement of the parieto-motor area).

Mention has already been made to the effect that recent investigations have demonstrated that flaccidity is a relatively common sign in cerebral lesions and results when a specific area in the brain is injured. The possibility that amyotrophy in cerebral lesions may be so advanced as to simulate poliomyelitis has been recorded in the literature. Some investigators have utilized cerebral amyotrophy as an important diagnostic sign of involvement of the parietal lobe.

Summary

We have presented a series of cases, each of which presented certain symptoms and signs simulating poliomyelitis. We have called attention to some of the more unusual conditions such as paralytic chorea, family periodic paralysis, various cerebral lesions including tumor and abscess of the brain, various types of neurosyphilis; as well as other conditions that were mistaken for the disease.

ABSTRACT OF DISCUSSION

Vincent T. Curtin (Scranton): I was particularly interested in Dr. Silverstein's paper because of the fact that we had on our service at the Scranton State Hospital, during the past few weeks, 2 cases which might well be classified, if not under organic nervous diseases, at least under the heading of miscellaneous infections or diseases resembling symptomatically anterior poliomyelitis.

One case was a little girl, about 3 years old, who had an elevated temperature, clouded sensorium, pain in the head and back, rigidity of the back, generalized tenderness which was much more marked in the lower extremities, respiratory difficulty, absence of reflexes, and some minor alterations in the spinal fluid, which alterations led us away from our original diagnosis of tuberculous meningitis.

We were at a loss to know what the diagnosis was. I might say also that on admission there was an eosinophilia, yet on subsequent examinations we found no eosinophils. Later, in conversations with the family physician, we found that 2 other members of the family were acutely ill with severe diarrhea, and upon investigating what food they had eaten, we found that they had possibly eaten uncooked pork.

Our little patient died in spite of all supportive treatment. In examining the muscles of this child (a strip taken out of several of the muscles), we found that they were loaded with Trichina. At first, I believe with some justification, we had leaned toward the diagnosis of infantile paralysis.

The second case came in almost before we had recovered from the first one. This was a boy admitted in shock and seen in the dispensary. He had a very high temperature, severe pain in the back, absent reflexes, respiratory difficulty, inability to swallow, and a history of having fallen down stairs. The intern suspected the possibility of a broken back. We were swayed away from that by other signs. The respiratory difficulty became so marked that it was necessary to put him in a respirator. He died within 36 hours, in fact before we had completed our studies. That evening his sister came in with a history of severe diarrhea, vomiting, and many signs and symptoms very much like the original patient.

The sister recovered and we then went into the feeding history. We found that these 2 children alone, rather than other members of the family, had eaten some pears which were in a can that had been open for some time. In cultures we suspected the Bacillus botulinus in spite of the high temperature. Both of these cases presented findings similar to the symptoms of infantile paralysis.

In concluding, I should like to say that this paper brings out 2 important factors: First, the medical problem, the difficulty in some instances of making a diagnosis of infantile paralysis early. One of my preceptors some 10 years ago, who is now living in a much better land, told me that after 4 years' training in children's hospitals the first case he met in private practice was one of infantile paralysis, and he missed the diagnosis entirely.

The second problem is a social problem. I know it does not occur in a city as large as Philadelphia, but in some of our smaller cities, where the newspapers are avid for news, as soon as a case of infantile paralysis is reported to the Health Department, the notice of that case immediately appears in the newspapers, and we who practice in these cities know what that means. Our telephones ring constantly because of distressed mothers. Children are withdrawn from schools and from camps. I know of one dairy that lost a great deal of business because a reported case was on the same street or within the same block as the dairy.

I do not mean that we should hesitate to diagnose a case if it be anterior poliomyelitis, and it should be reported, but we should be certain that such a case exists, and we should exhaust every possibility that it does not exist before we strike terror into the hearts of the parents and the community.

F.T.C. ON THE JOB

Crazy Water Company, Mineral Wells, Texas, and 4 of its executives, have been ordered by the Federal Trade Commission (F.T.C.) to cease and desist from misrepresentations concerning their products, recommended as a treatment for certain ailments and sold under the trade designations "Crazy Mineral Water," "Crazy Water Crystals," and "Crazy Fiz."

The 4 executives named respondents are Carr P. Collins, H. H. Collins, W. M. Woodall, and J. A. Pondrom, individually and as chairman of the board, president, secretary, and treasurer, respectively, of the Crazy Water Company.

The commission finds that in advertisements in newspapers, circulars, radio broadcasts, and other media in commerce, the respondents have represented that the mineral waters and derivatives thereof, which they sell, will cure or are beneficial in the treatment of many diseases of the alimentary tract, the urinary tract, kidneys, and gall duct, and kindred diseases and ailments; that constipation and "faulty elimination" are the causes of, and associated with, numerous ailments, afflictions, and conditions enumerated by them, and that the respondents' products possess beneficial, therapeutic properties with respect to curing and effectively treating constipation and "faulty elimination" and therefore the ailments enumerated.

The commission finds that the products possess no therapeutic value in excess of those of a cathartic or laxative, plus a tendency to neutralize excess gastric acidity temporarily, and serve no other purpose than to assist in the temporary evacuation of the intestinal tract and to tend temporarily to neutralize excess gastric acidity.

The respondents are ordered to cease and desist from representing that their products are a cure or remedy for certain diseases, or symptoms of diseases, of the alimentary tract, and certain conditions involving the urinary tract, kidneys, and gall duct, or constitute an effective treatment therefor in excess of the extent to which the product, by temporarily relieving constipation and gastric acidity, may be beneficial in treating such disorders when constipation and gastric acidity are contributing factors; and that such diseases or symptoms are necessarily caused by, or associated with, or that the respondents' products are a competent treatment for, constipation, faulty elimination, or excess gastric acidity.

The commission order also directs the respondents to cease representing that such products possess any therapeutic properties beyond those of a cathartic or laxative and as an antacid with a tendency to neutralize excess gastric acidity temporarily; or are a cure, remedy for, or possess any beneficial therapeutic properties in the treatment of urticaria, cirrhosis of the liver, chronic metritis, parametritic exudations, diabetes mellitus, gravel and calculous concretion in the bladder and gall duct, fevers, toxic conditions, typhoid, influenza, anaphylaxis, nephritis, pyelitis, catarrhal jaundice, cholecystitis, Bright's disease, kidney trouble, obesity, irregularities of the liver, gall duct, and bladder, rheumatism, arthritis, neuritis, high blood pressure, acidosis, lumbago, gout, poisonous system, affected vision, colds, scarlet fever, aching joints, and numbness of limbs, and that these ailments and conditions are caused by, or generally associated with, excess gastric acidity or constipation.

Pentothal Sodium Oxygen Anesthesia in General Surgery

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SERIOUS attention was first centered on the intravenous method of producing anesthesia about 1929 when it was first discovered that barbituric acid compounds could be injected into the blood stream with reasonable safety. Accumulative action of these drugs prohibited prolonged administration and limited their use to short minor surgical procedures. The advent of pentothal sodium in 1934 marks a decisive step forward in developing a less toxic and safer agent. C. N. Carraway's suggestion, in 1938, of using continuous oxygen inhalations during the administration of pentothal sodium adds another link in the chain of progress by offering additional safety to the patient. Due credit must also be given to the progress made in developing a satisfactory technic for injection. An effort will be made to show that the field of application now comprises all types of surgical procedures with certain limitations, no matter how short or long.

Physical Properties

Pentothal sodium is a barbituric acid compound and a trade name for sodium ethyl (1 methyl butyl) thiobarbiturate. It differs from nembutal by having one atom of oxygen on the urea side of the molecule replaced by an atom of sulfur. It is a lemon-colored powder, has a bitter taste, a slight odor of sulfur, dissolves readily in distilled water forming a perfectly clear solution with a yellowish tinge, and is alkaline in reaction. The solution is used in 1¼ to 10 per cent strength and preferably should be made up fresh as deterioration takes place in 24 hours. A cloudy solution should never be used no matter how recently it has been prepared.

Physiology

The physiologic action of pentothal sodium in producing anesthesia must be considered the same as other general anesthetic agents in the absence of any evidence to disprove this assumption. Physiologic chemists have been unable to determine the disposition of pentothal sodium after it is injected into the body because no trace of the drug can be found in the recipient's secretions or excretions if taken in therapeutic doses. The drug is broken up in the liver, and it is assumed that normal by-products are formed and excreted.

Systemic Reactions

The systemic reactions of pentothal sodium have been generally agreed upon as is shown by Carraway's personal investigations and the review of the literature and experiences of Henry S. Ruth. The blood pressure shows little variation in the majority of cases. There is a moderate fall at the beginning of anesthesia except in hypertensives where the fall is greater, but it soon returns to its original level and remains so. The pulse rate usually shows little variation in rate or volume. Electrocardiograms show practically no change in heart function, and it has been noted that irregularities noticed before operation remain unaltered by the anesthetic. Blood sugar determinations show a slight elevation after operation, but not sufficient in controlled diabetics to cause concern. Urinary secretion is unchanged and blood urea determinations are the same before and after operation. Quick's hippuric acid test for liver function shows no disturbance in liver function.

Systemic Response

The induction period with pentothal sodium anesthesia is a rapid and smooth procedure. A sigh or yawn precedes the closing of the eyelids before the patient lapses into unconsciousness. The period of excitement noted with other general anesthetic agents is entirely eliminated. There is no other sensation experienced except that of falling off into a natural sleep. Muscular relaxation soon follows and is detected in the jaw muscles. Respirations are regular but shallow and may be hard to detect when the drug is used without oxygen. Pallor may be noted in some cases. Carraway, who was a pioneer in using pentothal sodium anesthesia, considered the shallow respirations and pallor undesirable features. In 1938 he began the use of con-

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tinuous oxygen inhalations throughout the operation. This valuable contribution to the technic of administration was the means of establishing almost normal respiratory excursions, a normal color of the skin, and in addition muscular relaxation was somewhat increased. Under pentothal sodium anesthesia the skin remains dry and warm. Postoperative nausea and vomiting occur infrequently, which is a desirable feature.

Contraindications

Old age, childhood, severe anemias, diseases affecting the oxygen-carrying capacity of the blood, severe hepatic damage, hypotension, myocardial degeneration, chronic cardiac decompensation, coronary disease, uncontrolled diabetes, and any condition obstructing the air passages have been listed as contraindications; however, Carraway states that these conditions are not necessarily contraindications, but rather indications for its use in certain instances. The poor-risk surgical patient deserves careful individual study for the selection of a suitable anesthetic to decrease the risk, and pentothal sodium should be included as a possible choice.

The aged tolerate this anesthesia very well if a solution no stronger than 2.5 per cent is used. injected slowly to avoid an overdose, and if oxygen inhalations are given continuously and administered by one familiar with the actions of the drug. Children under age 10 should be accepted with caution as their vital lung capacity is less and they may not tolerate barbiturates very well. Unless the anemia is very severe, it is not a contraindication for pentothal sodium if oxygen inhalations are always used and a 2.5 per cent solution is injected. The injection must be slow to avoid an overdose as it has been noticed that much less drug is required to maintain a maintenance anesthesia in these cases. The cardiac group in the absence of dyspnea can be considered, as the elimination of the period of excitement, continuous oxygen, and the weaker solutions are to a certain extent safeguards. The controlled diabetic is not affected sufficiently to cause anxiety, but in the uncontrolled case the number upon whom we have used it is too small to offer a definite opinion. There are no ill effects upon the mildly jaundiced patient, but the deeply jaundiced and cases with hepatic damage should be approached with caution. Any condition producing obstruction to the air passages is a definite contraindication.

Preoperative Preparation

Only the usual preoperative preparation is necessary the evening before operation. There is no contraindication to giving barbiturates as a sedative to insure a good night's rest the night before surgery is contemplated, but we never administer it on the day of operation for fear of getting an accumulative action of the pentothal sodium. Thirty minutes before the operation is scheduled morphine sulfate (gr. 1/6) and atropine sulfate (gr. 1/100) are given hypodermically. The atropine is very essential preoperatively to prevent bronchial and pharyngeal secretions and in turn avoid a possible laryngeal spasm, while the morphine decreases the patient's nervous tension, encourages a smooth induction, and decreases the amount of drug necessary to produce anesthesia. It is most important that the stomach be empty at the time of operation, as vomitus can very easily be aspirated should vomiting occur during the second stage of anesthesia due to the abolishment of the cough reflex. We do not operate upon emergency cases under pentothal sodium oxygen anesthesia because we cannot be sure what the stomach contains.

Technic of Administration

Two anesthetists are required, one to administer the drug and watch the condition of the patient, the other to administer the oxygen and assist in observing any abnormal reactions. The patient is placed on the operating table and adjusted in the position desired for operation. The arm selected for injection is brought out to a right angle with the body and attached to an arm rest. After the operative field is prepared and draped and the surgeon is ready to start, the anesthetist applies a soft rubber tubing tourniquet to the arm to distend the veins and the needle is inserted into the vein. A 20-gauge needle on a 20 c.c. syringe is used. The patient is then asked to count slowly and 2 c.c. of the pentothal sodium solution is injected during the first 10 to 15 seconds. After a short pause to determine any idiosyncrasy to the drug and allow even distribution in the blood stream, the injection is continued slowly until the patient stops counting. At this stage the eyelids are closed, respirations are shallow, and the jaw muscles relaxed. The assistant anesthetist supports the jaw and adjusts the oxygen mask. A B. L. & B. mask with respiratory bag is used.

The oxygen inhalations are started with a flow of about 4 liters a minute. Since the vital lung capacity varies in different individuals, it may be necessary to increase the flow of oxygen to 5 or more liters per minute to establish the maximum respiratory excursion, which can be determined by the rise and fall of the respiratory bag. No additional solution should be injected until satisfactory respirations are established.

Sufficient solution is then slowly injected until a satisfactory state of anesthesia is obtained, but never more than one c.c. at a time without a pause of 15 to 20 seconds between injections to avoid an overdose. When in the opinion of the anesthetist the state of anesthesia is satisfactory, the surgeon as a further test pricks the skin and if there is no response he proceeds with the operation. It requires from 3 to 7 c.c. of the solution and about 3 to 5 minutes to produce a state of surgical anesthesia. An increase in the respiratory rate, slight muscular movements, and return of the swallowing and eyelid reflexes are signs that the patient is coming out of the anesthesia.

No standard dose can be set for pentothal sodium according to body weight, age, sex, or type of operation, as the amount of drug required to produce and maintain anesthesia to complete a similar surgical procedure on different individuals will vary in each case. Hiccoughs may be occasionally encountered and, if troublesome, the intravenous injection of atropine sulfate (gr. 1/100) will usually control them. At the conclusion of the operation 1 c.c. (gr. 1/20) of picrotoxin, which is a barbiturate antidote, may be injected through the needle before it is removed to hasten recovery. We do not administer it as a routine.

Precautions and Danger Signs

Pentothal sodium is not a "foolproof" anesthetic, which is true also of all general, spinal, and local anesthetic agents in use today. The compound is a respiratory depressant and causes death in this manner. Pentothal sodium should never be used by one not experienced in intravenous anesthesia and fully prepared to meet all anesthetic emergencies. The cumulative effects of the drug may appear suddenly and they are indicated by slow, shallow respirations or respiratory arrest, cyanosis, increase in pulse rate, and marked relaxation of the muscles. Metrazol, picrotoxin, and coramine must be immediately available to counteract these reactions. Oxygen under light pressure or artificial respirations may have to be resorted to.

Recovery

Recovery starts within a short time after the administration of the drug is discontinued. Some one must remain in constant attendance until breathing is about normal, swallowing reflex is present, and sufficient tone has returned to the jaw muscles to prevent the tongue from falling back into the throat, thus obstructing respirations. The patient may continue to sleep after his return to bed, but as long as the color remains good and there is no obstruction to breathing there is no cause for alarm. There is a direct relation between the length of time a patient is under the influence of the anesthetic and the length of the complete recovery period. No ill effects have been noted after many hours of sleeping.

Advantages

Aside from the importance of the safety factor, the degree of muscular relaxation produced by an anesthetic is the next principal requisite. With pentothal sodium oxygen anesthesia muscular relaxation is at least equal to that of spinal anesthesia, ether, or any of the various gases used, and in most instances is a great deal better. The rapid and smooth induction, quiet and even respirations, dry and normal feeling skin, and the infrequency of postoperative nausea, vomiting, and headache are additional advantages. The absence of the period of excitement, no knowledge that an anesthetic mask is being used, and the sensation of falling off into a natural sleep are features appreciated by the patient and allay the fear of additional anesthesias if indicated.

Disadvantages

Pentothal sodium oxygen anesthesia requires 2 experienced anesthetists to administer it and they must be prepared to meet anesthetic emergencies at all times. These requirements would limit its employment to hospitals only, except in rare instances. The time that an attendant remains with the patient after his or her return to bed should be considered a minor disadvantage. The ease of administration must be considered a disadvantage since the drug can be used without oxygen and the equipment necessary consists of a 20 c.c. syringe, a 20-gauge needle, distilled water, and the ability to puncture a vein. This will allow the inexperienced to attempt its use in the office or home without proper means of meeting an emergency. The elimination of the very young as desirable candidates for this type of anesthesia may be regarded as a disadvantage. Whether the early detection of a postoperative hemorrhage, as might occur in a gastric resection, could be obscured during the recovery period is subject to consideration. Due to good fortune the author lacks experience and cannot offer an opinion.

Analysis of Cases and Deductions

Our first approach to pentothal sodium anesthesia at the Guthrie Clinic was with caution and we confined its use to short minor surgical procedures. The supplementing of continuous oxygen inhalations with the administration of the drug soon disclosed that the combination resulted in an anesthetic with a margin of safety equal to that of ether, if given by experienced anesthetists. The oxygen not only established respirations to nearly normal depths and prevented pallor but it also appeared to prevent sudden concentrated action on the respiratory center and increased muscular relaxation. These beneficial effects of the oxygen permitted its use for all types of surgical procedures with certain limitations and a few contraindications as were previously outlined. Since oxygen was not given in all of our cases, only 652 out of 1337 administrations were used in tabulating the following data:

We employed a 5 per cent solution in all patients between the ages of 12 and 50 except where anemia or shock was associated or the patient debilitated. The average amount of a 5 per cent solution required for induction was 3.33 c.c. and 5.61 c.c. of a 2½ per cent solution, with 2 c.c. being the smallest amount in both strengths and 18 c.c. of the 5 per cent and 12 c.c. of the 2½ per cent as the largest. This tends to show, as in other anesthetics, that the amount of agent required to produce anesthesia varies with each individual. A grouping of the ages disclosed that 194 of the 652 patients were beyond age 50, and of these, 75 were between 61 and 70 and 38 between 71 and 80. The youngest patient was 9 years old and the oldest 87.

These figures tend to show that the anesthetic can be safely used for individuals past middle life. The reaction time may occur a few minutes after the anesthetic is stopped in short procedures, but in longer operations it varies in length in direct relation to the time consumed. The average reaction time in this series was one hour and 49 minutes, with one patient requiring 15 hours and 50 minutes before responding. The 2 longest operations were similar orthopedic procedures lasting 3 hours and 15 minutes; the one required 97 c.c. of a 5 per cent solution and had a reaction time of 2 hours and 5 minutes, and the other required 120 c.c. with a reaction time of 2 hours and 10 minutes. A prolonged sleep often followed the reaction time with one patient sleeping approximately 48 hours before recovery was complete, but no ill effects have been noted from either the long reaction time or recovery period. The incidence of hiccoughs during the anesthetic was .06 per cent. All patients received preoperative atropine which prevented bronchial and pharyngeal secretions. Nausea or vomiting was recorded in 17 per cent of the cases, but includes a number of questionable cases of nausea. There were no fatalities in this series attributable to the anesthetic.

In the time allotted only a few varieties of operations in which pentothal sodium oxygen anesthesia was used can be discussed. Operations on the biliary system often prove difficult at best and a great deal depends on the anesthetic for exposure. We performed 61 operations on the gallbladder and ducts under this form of anesthesia with gratifying results. The quiet, even respirations, satisfactory relaxation, and the ease of control of any straining in 15 to 20 seconds allowed adequate exposure. Muscular relaxation is the main reason given for using spinal anesthesia in performing gastro-intestinal surgery, but in 8 bowel resections, 8 gastroenterostomies, 2 gastric resections, 3 colostomies, and 2 ileocolostomies we found the relaxation equal to that of any other anesthetic.

Our pelvic cases are placed in the Trendelenburg position before the anesthetic is started except where spinal anesthesia is used, and we found in 42 supravaginal hysterectomies, 7 hysteropexies, and 15 operations on the tubes and ovaries that the intestine on opening the abdomen had in many cases gravitated out of the pelvis, requiring only the insertion of part of a gauze pack to obtain exposure. The elimination of the period of excitement, we feel, plays an important rôle in bringing this about. The prostatic case is often a problem from an anesthetic standpoint due to age and poor physical condition, but in 26 transurethral resections and 8 prostatectomies no difficulties were encountered. In 13 simple and radical mastectomies, 4 nephrectomies, and 15 vaginal hysterectomies the anesthetic proved very satisfactory.

Complications

The incidence of postoperative complications is no greater with pentothal sodium oxygen anesthesia than with any other anesthetic. In this series of cases one patient suffered a mild coronary attack several days after operation and another developed pneumonia, and in 2 cases the injection of a 5 per cent solution into the soft parts resulted in an indurated area about the site of injection in one case and a sloughing of a small area of skin in the other. We have had little difficulty with thrombosis of the veins following the use of a 5 per cent solution.

Summary

In this limited series of cases pentothal sodium oxygen anesthesia has proven satisfactory.

Pentothal sodium oxygen anesthesia is a rapid and smooth anesthetic, but should be administered only by those experienced in its action and prepared to meet all emergencies.

This anesthesia may be employed in all types of surgery with few limitations and contraindications, and it decreases postoperative nausea, vomiting, and headaches.

Atropine and morphine sulfate should always be given preoperatively.

ABSTRACT OF DISCUSSION

Henry S. Ruth (Philadelphia): Pentothal sodium was introduced in June, 1934, by Lundy at Rochester, Minn., and reported first by him in 1935 in the Proceedings of the Staff Meetings of the Mayo Clinic. Its use as an anesthetic agent has apparently steadily increased since that time. The use of intravenous anesthesia received impetus not only by the provision of a suitable agent for this method of administration but also through the suggested change in the technic of injection. Prior to 1929 intravenous anesthetics were administered according to pre-estimated dosage.

As Dr. Hawk has so adequately shown, a wide range of resistance is exhibited by patients toward the various barbiturates. Therefore, the dose should be calculated biologically; that is, according to the reactions produced by the administration of the drug. The intermittent method of injection, as now employed for pentothal, may be compared to the administration of inhalation anesthetics in that only a sufficient amount is administered from time to time as indications for it arise in a given patient.

I should like to emphasize that the ease with which the drug may be injected provides, possibly, its greatest danger. Like inhalation anesthetics, pentothal sodium is a progressive central depressant. In addition, there is no defense mechanism on the part of the patient as there is in the instance of the irritating inhalation anesthetics which, when given in too concentrated form, arouse a resistance on the part of the patient such as breath-holding and coughing.

Experience is the best guide for the amount to be initially injected. The suggestion of Dr. Hawk that 2 c.c. of the 5 per cent solution be injected in the first 10 to 15 seconds may at times prove to be an overdose to the aged, asthenic, and depressed patient. A moderately slow induction period is more satisfactory than a rapid one produced in 30 to 40 seconds. The rapidity of injection appears to be a mean between a rapid injection, which quickly depresses the respiratory center, and an injection which is sufficiently retarded so that time is allowed for the drug's detoxification before anesthetic concentrations are produced in the blood stream. After the induction, the injection of small quantities may produce respiratory depression, if narcosis is prolonged. Therefore, care must be exercised not only during the induction but during the period of maintenance.

The use of preanesthetic medication is important. It should never be a routine matter, just the same as when sedative drugs are employed before other types of anesthesia. Morphia is employed to decrease the total amount of pentothal required. Excessive amounts of morphia are to be avoided, because morphia depresses respiratory function, as does pentothal. We rarely prescribe more than 1/6 grain preoperatively; many times 1/8 or 1/12 is ordered, the latter dose particularly in the aged. After induction, if it is plain that excessive amounts of the drug will be required to maintain anesthesia, additional morphia may be given intravenously, slowly, until the pupils are seen to contract. Atropine or scopolamine are invaluable, for they tend to overcome reflex closure of the glottis, excessive laryngeal irritability, coughing and sneezing, which manifestations have been interpreted as parasympathetic overactivities. Here again, if these symptoms manifest themselves, additional atropine or scopolamine may be given intravenously during the administration of pentothal, either separately or dissolved in the solution of the drug.

Grossly speaking, we recognize 4 contraindications to the administration of intravenous pentothal. These are: (1) any interference with respiratory function, either mechanical or central, (2) cardiac dyspnea, (3) children under age 12, and (4) in operations where complete abdominal relaxation is required. Although, during our 5½ years' experience with this drug, we have many times administered it over prolonged periods, we still deem it advisable to recommend its use for operative procedures under 30 to 45 minutes. Occasionally, patients are encountered who do not tolerate the drug well. This is rare, but when it occurs, there should be no hesitancy in turning to other agents and methods. It should be employed with caution if there is abnormal liver function, although we have repeatedly given it for short operations in the presence of massive malignant invasion of the liver without material prolongation of nercosis or other postoperative complication. We consider the drug indicated for short operations on diabetics. Nausea and vomiting are common causes of postoperative acidosis in these individuals; the incidence of postoperative nausea and vomiting following pentothal is almost negligible. The drug is particularly adapted to the aged.

We do not employ pentothal combined with the routine use of oxygen. While it is commonly known that an excess of oxygen is extremely beneficial to a physically handicapped patient or during periods of excessive physical strain, it would seem to me that its routine use has disadvantages in this instance. When an overdose of pentothal is given, a depression of the respiratory center occurs. Thus, an inadequate oxygen supply is present. The administration of oxygen will overcome this factor, it is true, but it will not remove other undesirable features of respiratory depression, such as an excess of carbon dioxide. Therefore, it appears to me to be safer not to rely on oxygen routinely, but instead to have it available if an overdose has been inadvertently employed or to employ it when there is a deficiency in the oxygen transport system, as in anemia.

As we employ pentothal, it cannot be relied upon to produce complete muscular relaxation consistently. Even when oxygen is administered during its use, which, from the aspect of respiratory depression, allows the administration of greater quantities of pentothal than we think advisable, the relaxation of the abdominal musculature cannot usually be compared, in our hands, with that which we know we can provide by the use of other methods. It is true that in some individuals adequate relaxation of the abdominal muscles is produced by pentothal with what we deem to be safe dosage, but its appearance is not exhibited in a sufficiently consistent number of instances to be satisfactory for us. Therefore, we believe that the application of pentothal sodium should be confined to operative procedures of short or moderate duration, when extensive muscular relaxation (particularly abdominal) does not require it. We do, however, employ it in small doses as an adjuvant to subarachnoid anesthesia or local infiltration. It is particularly adaptable for use with block anesthesia to counteract nervousness and restlessness on the part of the patient and to mitigate procaine reactions.

In conclusion, we believe that pentothal sodium, administered intravenously, is an invaluable anesthetic agent if it is correctly administered to a suitable case.

The Obstetric Significance of Anatomic Variations in the Inlet of the Female Pelvis

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Philadelphia, Pa.

MODERN roentgenographic studies of the female pelvis have renewed interest in the relation between anatomic variations and the mechanism of labor. In general, these studies have tended to follow one of two lines of thought. Herbert Thoms, Samuel Hanson, and others have described the many differences in pelvic contour in terms of actual measurements of certain diameters in pelvic planes. On the other hand, W. E. Caldwell, H. C. Moloy, and D. A. D'Esopo have directed attention to the influence of the pelvic shape upon the engagement and descent of the fetal head. The present study was undertaken to find out if correlation of pelvic shape and dimensional mensuration would yield more definite criteria of the pelvic variations important to the management of dystocia problems.

Material and Methods

The material for study came from the Maternity Ward Service of the Hospital of the University of Pennsylvania over the years 1936 to 1939 inclusive. During this period the patients in whom a problem in dystocia was anticipated, and those who experienced some unexpected difficulty in labor, were referred for special roentgenographic study. The technic of roentgen examination was uniform, and consisted of a minimum of a pair of anteroposterior stereoscopic films and a single lateral view.

Mensuration, both of maternal pelvis and fetal head, was carried out after the method of R. P. Ball; anatomic description and classification followed the terminology suggested by W. E. Caldwell and H. C. Moloy. In their original suggestion for classification, the names of pelvic types were dependent on the shape of the posterior segment of the inlet. During our study we found that grouping of mixed types according to their predominant feature yielded more comparable material. For example, gyneco-flat pelves were considered to be of the flat rather than gynecoid type.

In addition to the accumulation of roentgenographic data, correlation with clinical records was carried out. For the sake of comparative study, we excluded patients who gave birth to twins or to infants weighing less than 2500 grams; moreover, only cephalic presentations were included. The present review is limited to variations of the pelvic inlet, and more particularly to a consideration of those patients in whom the fetal head failed to engage. During the period mentioned, version and extraction, forceps to the floating head, or craniotomy on the floating head was not done on any of the selected patients. Therefore, the cesarean section group represented our total experience with this important problem in dystocia.

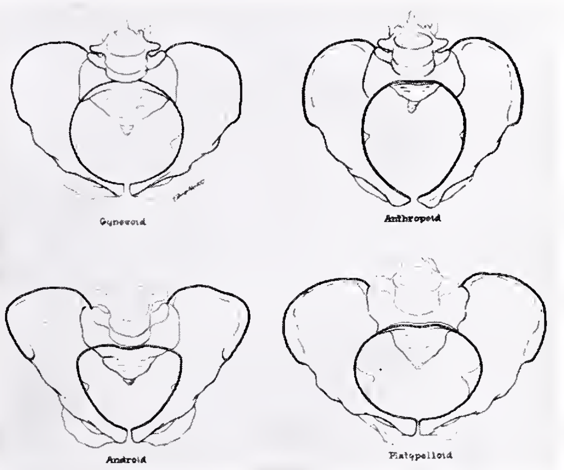

Fig. 1. The parent types of inlets of the female pelvis.

Results

Over the period of this study, 3837 patients were delivered. From the specially selected dystocia group, 580 patients qualified for complete review. The parent types of pelvic inlets may be seen in Fig. 1. The distribution of combined parent and mixed types has been shown in

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From the Department of Obstetrics and Gynecology, and the Department of Radiology, School of Medicine, University of Pennsylvania.

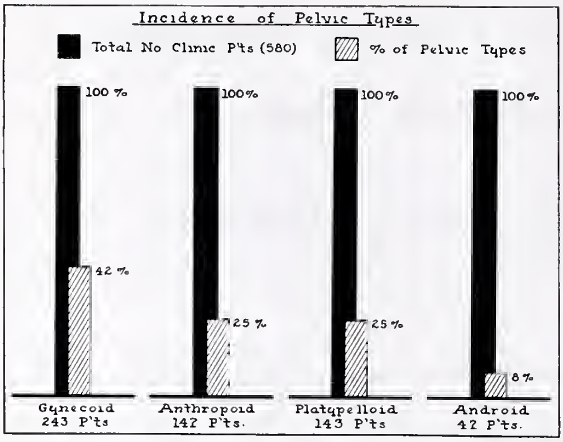

Fig. 2. Distribution of combined parent and mixed pelvic types. **Note the relatively high frequency of flat pelves, and the low incidence of android types.**

Fig. 2. In part, the high incidence of platypelloid pelves was due to the inclusion of all mixed flat types, but pure flat pelves made up 8.5 per cent of our series. The infrequent occurrence of android types is to be noted. The occurrence of 50 per cent negroes in our material accounts for some decrease in the frequency of the android type, but our white patients presented relatively few pelves of this type, as shown in Fig. 3.

The relation of the shape of the pelvic inlet to failure of engagement of the fetal head has been expressed in Fig. 4. Note that cesarean section was performed in only 7.0 per cent of the patients with anthropoid pelves, whereas those with flat or android pelves required this operation nearly 3 times more frequently. The high incidence of cesarean section in the combined group was due to the special selection of the patients; the total clinic frequency was 3.6 per cent.

The correlation of the length of the true conjugate with the pelvic type is seen in Fig. 5. Platypelloid pelves were consistently smaller in this dimension than any other type. An occasional android pelvis was very small, but the high incidence of this type in the conjugate group over 10.9 centimeters is to be noted. As expected, anthropoid pelves had long conjugates.

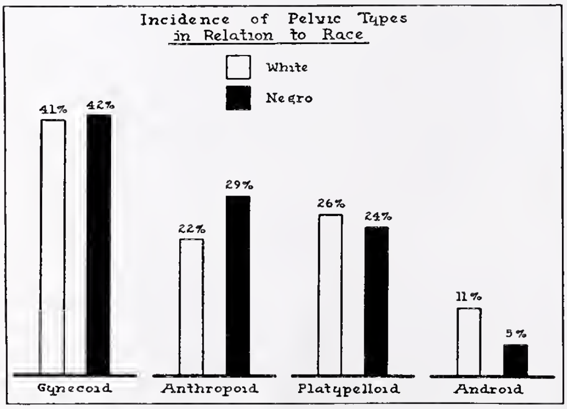

Fig. 3. Note the low incidence of android pelves, and the increased frequency of anthropoid types in negro patients.

The relation between the true conjugate and the need for cesarean section was brought out in Fig. 6. In the 12 patients who presented a true conjugate under 9.0 centimeters, vaginal delivery did not occur, although one-half of them were given a trial of labor. With the true conjugate between 9.0 to 9.9 centimeters, one labor in five failed to engage the fetal head. There seemed to be no general significance to this dimension when 10.0 centimeters was exceeded.

Fig. 7 was designed to show the correlation of the true conjugate with the shape of the pelvic inlet in relation to the need for cesarean section. As Fig. 6 had shown, with the true conjugate under 9.0 centimeters, engagement failed without regard for shape. However, note that in the group from 9.0 to 9.9 centimeters, flat pelves were relatively more efficient than gynecoid or android pelves; no anthropoid pelves occurred in this range. From 10.0 to 10.9 centimeters, only the android pelves were associated with an increased incidence of cesarean section.

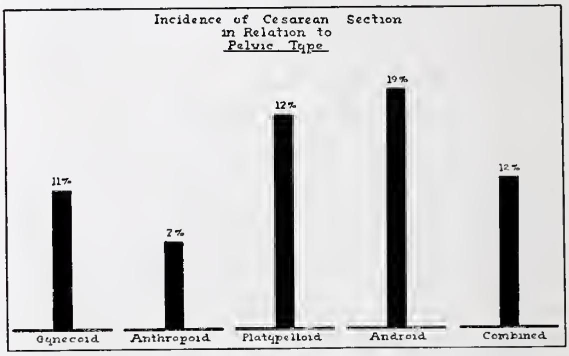

Fig. 4. Note the increased incidence of cesarean section in flat and android types. Compare the selected combined group with a total clinic incidence of 3.6 per cent.

Discussion

In comparative studies of anatomic variations of the female pelvis, inherent differences in the character of the material must be borne in mind. The influence of the negro race is to increase the incidence of anthropoid types and reduce the frequency of android pelves. Poor economic status is associated with an increased number of rachitic and other flat types. Moreover, selection of patients on the basis of anticipated or real dystocia brings out a relatively high number of pelves with small true conjugates. Unless these factors are taken into account, no accurate comparison can be made between patients from different clinics.

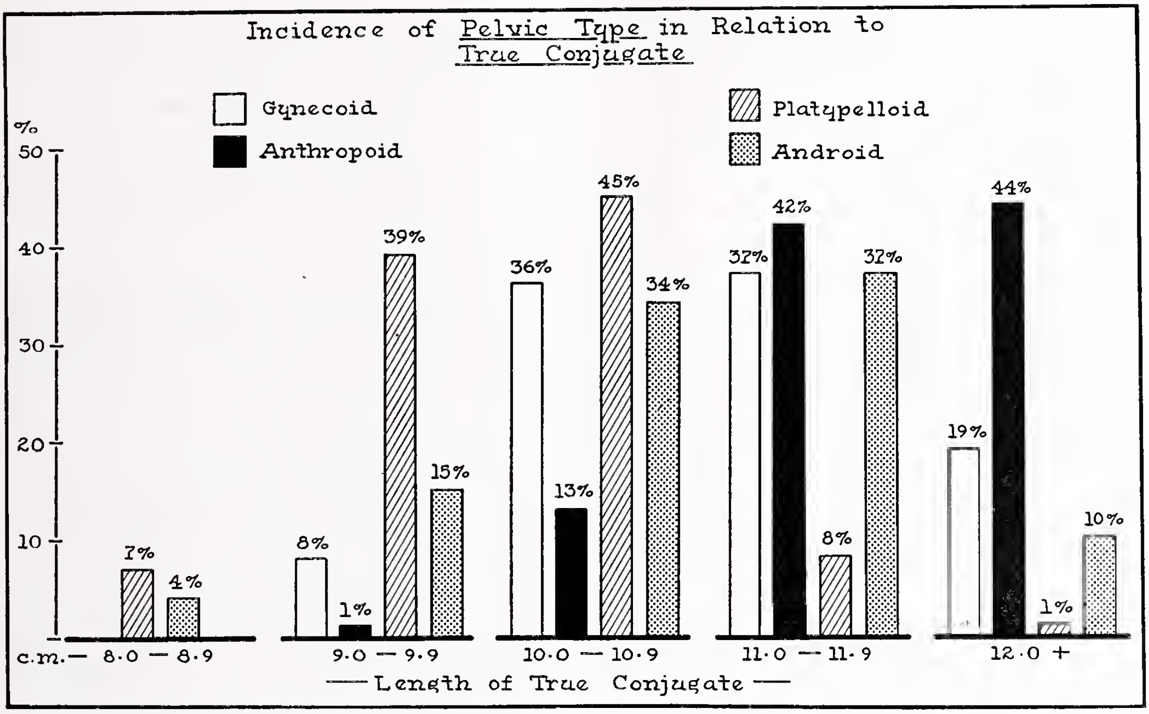

Fig. 5. Note the distribution of flat types to the small true conjugate groups, and the anthropoid pelves to the large ones Android pelves have a wide range of distribution with 42.0 per cent being over 11.0 centimeters.

Study of individual groups has shown that a knowledge of pelvic shape is applicable to obstetric maneuvers. However, in evaluating the specific problem of engagement of the fetal head, spatial relationships appear to be of primary importance. The expression of available pelvic space in terms of a single diameter is not adequate, but the true conjugate offers the most practical criterion of comparison. It seems significant that in 3442 deliveries of term infants we have not had a vaginal delivery in a patient with a true conjugate less than 9.0 centimeters. Conversely, in many pelves with true conjugates of 9.0 to 9.9 centimeters, a trial of labor is commended by the ability of 65 out of 83 of our patients to deliver normally infants weighing on the average of 3250 grams.

In the borderline group, from 9.0 to 9.9 centimeters, the correlation of pelvic shape with the true conjugate is valuable. The teaching of J. Whitridge Williams that flat pelves will accommodate fetal heads better than other types of similar anteroposterior dimensions is borne out in our material. A patient with a flat pelvis having a true conjugate over 9.0 centimeters would warrant a trial of labor because the increased transverse width of the pelvic inlet will allow for maximum moulding of the fetal head. In this connection, we have noted that the biparietal diameter of the fetal head in normally born infants of patients with flat pelves is 0.2 centimeters smaller than the average measurement found to occur in other types.

In gynecoid pelves with a true conjugate less than 10.0 centimeters, the proportionately decreased transverse width of the inlet increases the difficulty of engagement of the fetal head. The high incidence of cesarean section after a thorough trial of labor indicates the need for careful review of all facts concerning any patient in this group. Clinical disproportion or roentgenographic evidence of a large fetal head should bring the question of elective cesarean section under serious consideration. When the true conjugate is over 10.0 centimeters, no problem is presented.

As Caldwell and Moloy have pointed out, the android pelvis brings up a very special problem. The triangular shape of the inlet makes less space available for engagement of the fetal head than in any other pelvis of similar dimensions. Even with a true conjugate of 10.0 to 10.9 centimeters, a high incidence of cesarean section is observed. However, it should be noted that even this generally unfavorable type is efficient when the true conjugate exceeds 11.0 centimeters.

The remarkable ability of anthropoid pelves to allow for engagement of the fetal head bears notice. This advantage is the result of a large available area rather than any other particular feature. Not only is the anteroposterior space ample but only 8 per cent of this type have a

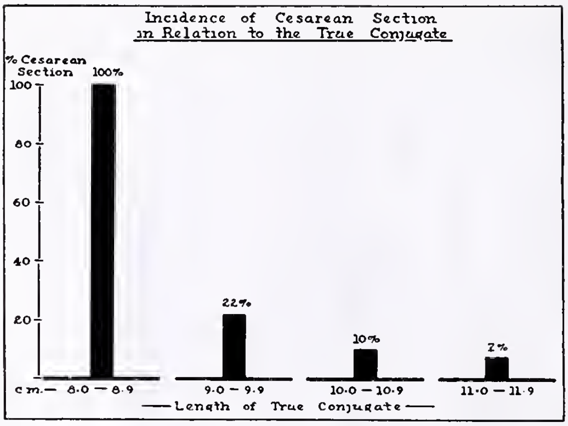

Fig. 6. Note that cesarean section was required in 100 per cent of patients with true conjugates less than 9.0 centimeters.

transverse diameter less than 11.0 centimeters, and none less than 10.0 centimeters.

No mention has been made of the importance of the inclination of the pelvic inlet as a factor in failure of engagement of the fetal head. Although opinion differs, it seems likely that a greatly increased inclination of the brim is occasionally the cause of dystocia. However, no significant correlation could be worked out from our material to substantiate this point of view.

Summary

1. Roentgenographic data was correlated with the clinical history of 580 patients selected on the basis of anticipated or actual dystocia.

2. Attention was called to the variation in material from different clinics, depending on race, economic status, and method of selection.

3. Study of the anatomic variations of the inlet of the female pelvis was applied to the problem of failure of engagement of the fetal head at term.

4. Correlation of the true conjugate diameter with the shape of the pelvic inlet gave the most satisfactory type of analysis of our material.

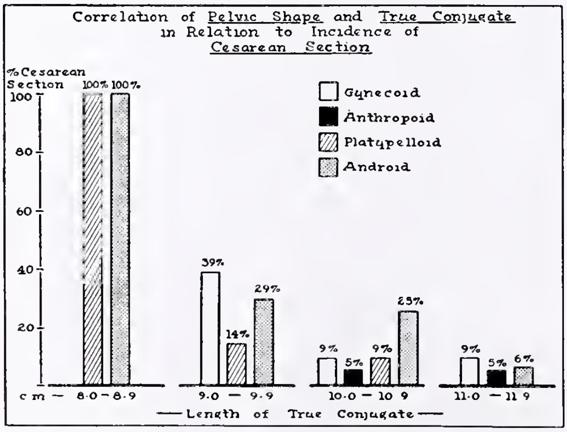

Fig. 7. Note that in the borderline group, between 9.0 and 9.9 centimeters, flat pelves were the most favorable. Android types were unfavorable in all groups up to 11.0 centimeters.

5. When the true conjugate was less than 9.0 centimeters, the term fetal head did not engage in any instance. Fortunately, a pelvis this small was seen in only 12 patients.

6. When the true conjugate was from 9.0 to 9.9 centimeters, flat pelves were much more efficient than gynecoid or android pelves. In this range anthropoid pelves did not occur in significant numbers.

7. When the true conjugate was over 10.0 centimeters, only the android types were associated with a high incidence of cesarean section. When over 11.0 centimeters, even an android pelvis may be expected to accommodate the fetal head.

8. The remarkable efficiency of anthropoid pelves was due to their large size; not only were the true conjugates long but the transverse diameters were under 11.0 centimeters in only 8 per cent of our patients.

9. No correlation between the degree of inclination of the pelvic inlet and failure of engagement of the fetal head could be established.

ABSTRACT OF DISCUSSION

Carl E. Bachman (Philadelphia): Drs. Klingensmith and Barden have limited their study to a consideration of the influence of the size and shape of the pelvic inlet upon engagement of the fetal head at term. They have not attempted to evaluate the influence of the size, shape, or position of the fetal head on this mechanism. Their criterion for failure of adaptation of the head to the inlet has been an objective one, namely, failure to engage after a trial of labor.

Their results provide an affirmation of an old truth, and emphasize one or two new ones. The first and obvious conclusion is that the size of the inlet is the most important single factor in determining whether the fetal head will engage. Thus, no vaginal delivery of a full-term infant occurred among women in whom the true conjugate was less than 9 cm., and no woman failed to deliver vaginally whose true conjugate was greater than 12 cm. The second conclusion is that the shape of the inlet is important only in those women in whom the true conjugate is greater than 9 cm. and less than 12 cm. It is obvious, as the late J. Whitridge Williams taught, that if the pelvis is small it is better for a woman to have a flat pelvis than any other shape. Equally, it is clear that the worst type of small pelvis is, as Caldwell and Moloy have shown, the triangular or android type.

From the practical standpoint, this study suggests that, in women who present problems of inlet disproportion, roentgenographic examination is hardly likely to be useful if the true conjugate diameter exceeds 12 cm. This is not meant to imply that roentgenographic study of the pelvis is not useful for examining other problems of labor mechanism; the authors, however, have restricted their discussion to a consideration of engagement.

Thaddeus L. Montgomery (Philadelphia): What was the method used in the determination of the true conjugate? Was that determined by roentgenographic methods or by manual examination? When the roentgen-ray studies were made of the pelvic architecture, was the examination made early in pregnancy or at full-term pregnancy?

DR. KLINGENSMITH: The measurements noted in this study were obtained from roentgenograms. The customary external and internal pelvic diameters of each patient were available, but the variations in the manual method were greater than those recorded from the roentgen films. At the outset of the present study the roentgen technic was checked and found to be accurate within 0.2 centimeter variation.

In our material the selection of the time in pregnancy for roentgen examination was influenced by a desire to compare fetal head size with available space. Most of our patients were examined at about the thirty-sixth week. Attention to technical details of roentgenography permitted good films at any time during pregnancy, unless the patient was extremely obese.

Effort spent in centering the patient so that the plane of the pelvic inlet was parellel to the film improved our anteroposterior views. The use of the stereoscope obviated the necessity of exact centering, but disagreement in the interpretation of pelvic shape arose among trained observers when the pelvic inlet was rotated. A well-centered inlet could be evaluated without special equipment, and one anteroposterior film was adequate. Of course, a lateral view was an indispensable part of every examination.

NORRIS W. VAUX (Philadelphia): I would like to call attention for just a moment to Dr. Klingensmith's very excellent presentation of this subject, which has always disturbed the obstetrician to a greater or lesser degree, and also to thank Dr. Bachman for calling our attention to some of the older methods and ideas involved in the question of pelvic measurements.

I do not feel that we should entirely give up the practice of external pelvic measurements in pregnancy and in obstetric work. Dr. Klingensmith has pointed out very clearly that the roentgen application of pelvic measurement is probably far more accurate. Dr. Bachman has told us that they have benefited distinctly in the matter of accepting these roentgen pelvic measurements when there is a question of pelvic contraction leading to section or trial labor and section, or allowing the patient to go through her labor with a vaginal delivery.

Not everyone can do a roentgen pelvimetry application accurately and well. Therefore, I fear that a number of general practitioners might neglect taking the important pelvic measurements if too much reliance is put on roentgen pelvimetry, and consequently lose track of the importance of determining the type of pelvis with which they have to deal. The physician should unhesitatingly subject all women under his obstetric care to external pelvimetry, and in those with questionable pelves he could possibly resort to roentgen ray.

NIGHT CLASSES IN HEALTH AND HYGIENE

Classes in health and hygiene are being given at the Fifth Avenue High School, Pittsburgh, Pa., on 6 Monday evenings. The classes began on Mar. 24. They are held from 7 to 8 o'clock and are sponsored by the Allegheny County Medical Society in conjunction with the Pittsburgh public schools. The speakers are members of the society and are furnished through its Bureau of Medical Information. This series is for men.

The men eligible to attend are those employed in service merchandising, retail or wholesale, in hotels, restaurants, and amusements.

The first speaker of the series was Oliver E. Turner, M.D., Allegheny County district health officer, who talked on "Public Health as It Affects the Individual."

Millard C. Hanson, M.D., director of the Pittsburgh syphilis control program, had as his subject, on Mar. 31, "Syphilis, the Individual, and the Community."

On Apr. 7 the subject was "Tuberculosis," and the speaker was George E. Martin, M.D., medical director of Leech Farm, the City of Pittsburgh Tuberculosis Sanatorium. Dr. Martin discussed the disease itself and the latest methods of treatment.

"Pneumonia and the Recent Advances in Its Treatment" will be the subject of the Apr. 14 talk, to be given by George J. Kastlin, M.D. What the influence of sulfapyridine and similar compounds has had on the mortality rate, particularly in Pittsburgh, will be of great interest.

"General Health Measures," with reference to diet, exercise, rest, work, and vacation, will be discussed by Harold P. Hook, M.D., on Apr. 21. This talk will enlighten the layman regarding the value or uselessness of current ideas and theories.

The series will be concluded on Apr. 28 by Andrew P. D'Zmura, M.D. He will discuss "Heart Disease," and the difference between the medical and lay views of the seriousness of the various kinds of heart afflictions will be explained.

In these 6 talks the subjects are those of interest and importance to the layman. He is given authoritative medical information on the aspects of health and disease that are uppermost in his mind.

CONSERVING THE PATIENT'S TIME

When a patient visits a busy practitioner, he is usually resigned to a long wait in the waiting room and probably takes pride in the fact that his physician is such a busy man, but the long wait is never a pleasant ordeal. When it is necessary because of the time taken with other patients, no legitimate objection can be made by anyone and rarely is made, but there are times when physicians subject their patients to needless and inexcusable delays. Often this is thoughtless, and occasionally some physician thinks he is thereby impressing the patient with his importance, but it is more likely that he is driving his patient to a more considerate physician.

There are times, of course, when it is essential to dictate a letter to the secretary at once, but then the patient has a right to expect an apology. There is never an excuse for a physician to dawdle over breakfast or dinner well into the office hour while a group of people are impatiently cooling their heels.

A patient's time is important to him, if to no one else, and an application of the Golden Rule will pay the physician dividends. It sometimes is worth while when the physician becomes the patient and has an opportunity to assume the patient's outlook. After a few such experiences he is apt to be a bit more considerate.—*The Weekly Roster and Medical Digest.*

Progress Report of Division of Cancer Control, Pennsylvania State Department of Health

STANLEY P. REIMANN, M.D., and RUFUS S. REEVES, M.D.
Philadelphia, Pa.

IN MAKING this second preliminary report of the activities of the Division of Cancer Control of the Department of Health of Pennsylvania, I am sorry that I cannot give meaningful figures concerning the end results in the many individual patients whose disease has been reported. But this cannot be expected, for the division has been functioning a few months over a year and cancer is a chronic disease. There are, however, a number of remarks which I may make which can be said to be results of the program in other directions.

Being by nature a pathologist, I naturally consider this aspect first. I begin by stating that of the 3 fields mainly concerned in tumor reporting, that covered by the pathologists has been handled in greater detail and with more usable data than that of the other two, namely, the roentgenologists and the clinicians.

There are a number of suggestions which can be made on the basis of the experience thus far gained in pathology. On several occasions boxes of microscopic preparations have been sent to various parts of the state with the suggestion that the local pathologists look at them and give their opinion. Among these slides are some showing typical lesions in typical regions in which cancer occurs and are for our general information. Others we have called "screw balls," because, even though data are forthcoming about the patient and even though the microscopic preparations are well made, there is room for differences of opinion expressed not merely in details of terminology about which a word or two will be said later, but actually in the fundamentals of the case. These are examples of slides with which we pathologists are often twitted by clinicians who say they have sent around bits of the same piece of tissue to a half-dozen pathologists and have gotten a half-dozen different opinions. Sometimes they even send around the same slides. In some of these instances the correct diagnosis has been made later when the subsequent history of the patient gave further information. In other cases no further data were forthcoming, and to be truthful we should simply admit we do not know enough, as yet, to classify these conditions. On the whole they are relatively few in number. If they could not be classified strictly, nevertheless it was usually possible to place them in some big class such as "tumor malignant."

Still another group of slides in the collections are those in which the reporting pathologist made a diagnosis, but other pathologists found difficulty in understanding how any diagnosis at all could be made. These were the ones that were fixed improperly, dehydrated and imbedded improperly, cut with a saw instead of a knife, stained improperly, and mounted improperly. I could, if you want them, give you percentage figures as to how many there are, but figures are notorious, so we will simply let them be quite a respectable number in the general group.

Fourth and last in the collection are slides about which Dr. R. S. Aronson and I are anxious to clarify our position. It is that neither one, nor both of us together, in any way claim omnipotence or infallibility, not even superiority in diagnosis. Both of us have had considerable experience in the field and both of us try to diagnose each slide before looking at the opinion of the pathologist who reported the case. Before finally disposing of it, we cheerfully agree that the pathologist who sends in the slide is as much entitled to his opinion as we are. But we ask for other opinions, and if there is unanimous agreement among several other pathologists that the diagnosis is incorrect, we accept it as such and try to find a better one.

Please allow us to clarify the matter still further by saying that such slides are placed in the files with several diagnoses attached to them. We say nothing about the disagreement if for no

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Read before the Section on Clinical Laboratory Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

other reason than that we realize we are not always correct ourselves nor are our several consultants. Another reason is that this would lead to no end of controversy without producing corresponding useful results.

The remedy for these several items is quite obvious. It is primarily more research into cell and tissue behavior, and more experience on the part of pathologists including ourselves.

The division does not act as consultant, for obvious reasons. On numerous occasions, however, pathologists have visited the office and we have been glad to review their own slides with them, but under no circumstances have we shown anyone the slides of other pathologists except with all identifying marks removed. This is just as true of the clinical data.

I can safely say that all of us learn from these consultations. To the end of better education and more experience for the pathologists of the state, the Division of Cancer Control can contribute a lot. Specifically, it contemplates the continuous circulation of boxes of slides with clinical data corresponding, the making up of collections of typical slides, and the issuance from time to time of short bulletins on controversial points in which there seems that some sort of agreement may be reached, at least among ourselves.

In the matter of poor microscopic preparations, you will remember that a Postgraduate Institute for Technologists was held last March in Philadelphia. At that time a prize was offered for the best histologic preparations of 5 typical kinds of tissue. Competition was keen and many excellent preparations were presented. In the background there lurked the idea that this would bring to light talent in various parts of the state which could be put to broader use. A committee has been appointed from the Section on Clinical Laboratory Medicine to organize short-term postgraduate courses in histologic technic in various parts of the state, using the excellent talent that has come to light as teachers. A minimum fee can be arranged with the pathologists in the laboratories which harbor these good workers. Slowly but surely this method should solidly improve the general standard of tissue preparations throughout the state. This, I take it, is getting to first base in the problem, and I hope it is pushed.

I remind you that the Cancer Commission of The Medical Society of the State of Pennsylvania endorses this proposition whole-heartedly and urges that no time be lost.

The matter of nomenclature is a perennial headache. Dr. Aronson and I have been very careful not to mistake differences in nomenclature for differences of opinion, but the tendency to give a thing a name and then consider the problem solved is so unfailing a fault of human nature that we are constantly at odds with it.

The Cancer Commission of the State Medical Society has been asking for the past year or two that something be done about this, at least in our own state. All of us are quite certain that even with the best of intentions and with the hardest kind of work, no ideal classification can be constructed. Nevertheless, we are certain that many names can be thrown overboard, that one or two can be picked as being more descriptive or more accurate for many cases of tumors, and that with a modicum of good will, compromise, and give and take, the pathologists of the state should be able to agree on a reportable classification. But this is not enough. Surgeons and other clinicians are equally at fault, and unless there is agreement among all who see tumors, the pathologists themselves can do but an incomplete job.

A committee for this purpose has been appointed from among the pathologists and I urge that to this committee be added representatives of various other specialties and that they really try to clarify matters a bit. I admit freely that it is a thankless task, but think you will agree it is one which will be of very great benefit in our understanding of each other.

We have many blanks with radiologic data, but these have not been studied extensively. We invite the radiologists to see what it is all about. We appreciate the efforts that radiologists through their various societies have put into proper methods of recording their various dosages and procedures. We hope that they will use the blanks in the Division of Cancer Control to help them in their evaluation of their combined results. We invite suggestions from time to time as to change.

Now as to clinicians, I will read the following from Dr. Rufus S. Reeves:

"When one looks over the clinical data which have been sent in with the more than 8000 reports on file in this division, the outstanding fact is the conspicuous absence of material along the line of history and symptoms. The clinicians of Pennsylvania surely keep better office records than have been sent to us, and we are urgently requesting that this highly important material should be filled in during the next year. We are pioneering in this work and the clinician does not have the advantage of having pieces of tissue sent to him that the pathologist has, so that it must be evident to those who are familiar with the new forms that a great responsibility rests upon the clinician's portion of the blanks.

"This leads to the further observation that those of us who are actively carrying on this work—a pioneering but a great humanitarian effort—realize that there are many more cancer cases than have been reported to our division. The responsibility of the medical profession is a grave one, and when it has the opportunity which is here presented to benefit both the public and the profession by the educational efforts being made for both, we do not hesitate to ask all members of the medical profession of the State of Pennsylvania to give their whole-hearted support to this work.

"Doubtless you have all noticed that we have improved the original forms, and where there are valuable changes which come to the minds of any of you before the next lot is printed, we would appreciate your constructive contribution. Some details may seem unimportant, but what you have seen on these forms which are being used represents long hours of work, not only by the members of this division but with correspondence from medical leaders in our state who are paying particular attention to cancer work."

Among many other things which I could say, let me close with a few figures. About one-third of the physicians and institutions in the state are co-operating whole-heartedly, about one-third in a desultory way, and about one-third only occasionally. In spite of this, we are assembling a splendid number of facts from which superior statistics can emerge.

Again I repeat that this program is to provide ammunition for all of us to use in our detailed work with tumor patients. There is no royal road to learning more about cancer. Through this system and the vision of Dr. John J. Shaw, Secretary of Health, we have in Pennsylvania a rare opportunity, but it requires work. As we have been at pains to point out many times, in contrast to infectious diseases in which "George" can do the quarantining and many other things, in cancer every individual must be constantly alert and by contributing his experiences to the sum total, wisdom may yet appear about this disease.

Incidentally, some physicians throughout the state, who are actually on cancer committees in various counties, are not co-operating in this program even though it has been endorsed by the State Medical Society and its Cancer Commission. Most of us, I believe, have no patience with physicians who use as an excuse that they should withhold data because it is from private patients. If there were any other way to obtain this mass information, it might be an excuse. If the patients' and doctors' names were bandied about the state, it would also be an excuse. If individual cases with names were considered in the study, this would be an excuse. Every one of us has individual experience, but there is no one here who has enough to answer the important questions which this program will be able to do if everyone helps over a period of a few years.

I remember many of the aphorisms of my beloved chief and colleague, the late Dr. John B. Deaver. Among them was this one, "The Lord help the patient whose doctor has had a case." In cancer even a hundred cases do not lead to wisdom.

Finally, while I promised that I would not, I cannot seem to resist the impulse to put a few statistics into this communication. They concern delay times, and are of 2000 cases.

Average delay time between first symptom and visit to the physician:

Males		*Females*	
White	Colored	White	Colored
16.6 mo.	9.9 mo.	15.9 mo.	15 mo.

Average delay time between visit to physician and treatment:

Males		*Females*		
White	Colored	White	Colored	Average
4.4 mo.	1.8 mo.	5.3 mo.	9.5 mo.	4.2 males 5.1 females

Average delay time between first symptom and treatment:

Males		*Females*		
White	Colored	White	Colored	Average
21.5 mo.	12.6 mo.	21.3 mo.	24.3 mo.	21 males 21.6 females

Again, of these 2000 cases reviewed, I present some facts pertaining to the site occurrence of the cancer: In males the digestive tract accounted for 32.4 per cent of the cases, the urogenital system 21.8 per cent, and the skin 17.4 per cent. These 3 important anatomic systems together represent a total of 71.6 per cent, or approximately three-fourths of all the cases reviewed.

In the females the urogenital tract accounted for 52.7 per cent and the breast 18.5 per cent, or 71.2 per cent, again these 2 systems together approximating three-fourths of all the female cases reviewed.

Of interest also was the age incidence in this group:

Males		*Females*		*Average Age*	
White	Colored	White	Colored	Males	Females
56 yrs.	52 yrs.	49 yrs.	42 yrs.	54 yrs.	48 yrs.

Of the 10,000 cases already reported, the females greatly outnumbered the males—6102 to 3449.

More figures will be forthcoming as time goes on. As a last word, may I emphasize that these data are for the physicians' study and we invite your interest in this, too.

ABSTRACT OF DISCUSSION

SAMUEL R. HAYTHORN (Pittsburgh): The reporting of cancer cases and the collection of statistics on related facts is undoubtedly important, but in our enthusiasm consideration of the cancer patient must not be overlooked. It is sometimes advisable for his own good to withhold from the patient the knowledge that he has a cancer, so that regardless of the number of questions and the special information desired it may be obtained from the patient at the first interview whether cancer is suspected at that time or not. I have known patients so apprehensive that, when they are told they have cancer, they give up completely and make no effort to recover. It will not help such a patient's psychologic reactions to return to him after an operation with an additional set of very suggestive questions.

An even more important phase of the reporting of cancer cases than the collection of statistical data is the demand that the diagnosis be backed up by microscopic slides. This accomplishes 2 things: It gets the clinician away from making uncontrolled cancer diagnoses on purely clinical findings, and it affords an opportunity to improve both the personnel and the technical facilities of hospital laboratories.

There has been considerable criticism of the technical work and of the types of slides submitted in some instances. It is by no means fair always to direct criticism at the technician when good routine slides are not forthcoming. If I can add one contribution to this discussion, let it be a plea for good primary fixation of tumor tissues.

It may seem presumptuous on my part to discuss such a simple matter, but in the course of a year I see sections from a good many laboratories, and occasionally I receive large, uncut specimens in containers with just enough fixative to cover them. Our technicians who ordinarily obtain good preparations from our own routine material fail completely with such specimens.

In many places it is the practice to force a tumor nodule into a wide-mouthed bottle, barely cover it with formalin, and leave it for several days before the sections are taken to be put through. Invariably the outside becomes hardened and crusted, and the inside remains unfixed. The section is then likely to be taken from the central portion of the tumor and given to the technician to embed, cut, and stain. The best technical assistants in the world cannot make an acceptable preparation out of such a block. Another practice is to place the entire specimen in one of the museum fluids, which preserves the color on the outside and leaves the inner portions to putrefy and undergo liquefaction. If the pathologist himself is not able to see to the fixation, it should be emphasized and re-emphasized to the person responsible for this part of the work that the sooner a tumor is fixed the better the sections are certain to be, that only thin sections can be fixed quickly, and that at least 10 times as much fluid should be used.

In our laboratory we prefer to use Zenker's fluid because it permits differential staining with Mallory's phosphotungstic acid hematoxylin stain and Mallory's aniline blue for connective tissue. It must not be forgotten that Zenker's fluid will not penetrate any tissue other than lung for a distance of more than 3 or 4 mm., which excludes any block thicker than 8 mm. The amount of Zenker's fluid should exceed that of the volume of tissue by at least 10 times, and, while the time of fixation may be varied with the size of the piece, it is never permissible to use Zenker's fluid a second time. In most laboratories 10 per cent formalin is used, and here again the very best results are obtained where separate pieces of the tumor, not more than ½ cm. in thickness, are fixed in fresh formalin.

It is my opinion that nine-tenths of the technical difficulties in cutting and staining of sections are due to loose practices in fixation.

Finally, I do not think that the ability of the pathologist should be judged either on his interpretation of rare and unusual tumors uncommon in his experience or upon the nomenclature which he uses. The nomenclature in different parts of the country varies considerably, and the pathologist is likely to follow the practice of the laboratory in which he was trained. He should be capable of diagnosing the more common neoplasms when he sees them or at least be able to determine whether the tumor actually is or is not malignant.

AUTHORIZATION OF PHYSICAL EXAMINATIONS, TREATMENTS, OPERATIONS, AND AUTOPSIES

Ordinarily an operation must be performed strictly within the limits of the authority that has been given. Authority may be given, however, for the operating physician to use his own judgment, and this usually should be demanded by the physician.

Written Consent Preferred

Consent by word of mouth to an operation or an autopsy is probably the most common form of consent. . . . Oral consent is, however, open to misunderstanding and may be difficult of proof. Whenever it is to be relied on, consent should be given in unequivocal terms, in the presence of one or more disinterested witnesses. Written consent to an operation or to an autopsy is by far the safest, for it permits a clear record of the nature and extent of the operation or autopsy that is authorized. If the patient is a minor, authority for an operation must come from his parent or guardian.—*Board of Trustees, The Medical Society of the State of Pennsylvania.*

Chemotherapy in Otolaryngology

JOSEPH W. HAMPSEY, M.D.
Pittsburgh, Pa.

IT IS now 3 years since chemotherapy has become an important adjunct to otolaryngologic practice. During that time certain phases of the subject have been clarified and some procedures have become standardized. However, there remain a number of important questions about chemotherapy in otolaryngology which are as yet unsettled and await further evidence from the laboratory and the bedside. In this report of my own experience with drugs I shall try to analyze some of these questions.

The effectiveness of chemotherapy depends principally on two factors—dosage, and the type and number of organisms present. First, we must choose the drug that is to be used. Three drugs are available today—sulfanilamide, sulfapyridine, and sulfathiazole. If we know, or strongly suspect, the type of organism present, we may proceed with the drug that is most effective against that organism. Thus sulfanilamide would be chosen to combat the hemolytic streptococcus, sulfapyridine the pneumococcus, and sulfathiazole the staphylococcus. However, if the bacteriology of the infection is unknown, then the drug of broadest coverage should be used. Until recently this has been sulfapyridine, which was more effective against the pneumococcus and certain strains of the streptococcus than sulfanilamide. Certain results of treatment with sulfapyridine, such as the rather frequent nausea and vomiting, made sulfanilamide the drug of choice in infections due to the hemolytic streptococcus. Recently sulfathiazole has been reported to be relatively free from the unpleasant effects of sulfapyridine, and in addition it is more successful in combating the staphylococcus. The dosage of the 3 drugs varies somewhat, being slightly lower for sulfapyridine and sulfathiazole than for sulfanilamide. A maintetenance dose of three-quarters of one grain to one grain per pound of body weight in 24 hours is a good general rule, with an initial dose of one-half of this amount. In general, children tolerate the drugs better than adults, and the doses given are relatively somewhat higher. Many infections will respond well to less than one grain per pound of body weight, while some will require more. Parenterally, sulfanilamide is preferred, and it may be given up to 1 per cent solution in normal saline subcutaneously, intraperitoneally, or intravenously.

From our standpoint the most striking benefits from chemotherapy have occurred in the treatment of acute otitis media and its complications. The carefully controlled reports of many observers and our own experience have shown that the incidence of mastoiditis following acute otitis media has been greatly decreased by the use of sulfanilamide and its derivatives. However, this good effect has not always been to the patient's advantage. The more recent literature contains numerous references to the masking effect of sulfanilamide. When a patient so treated developed an operative mastoid, the clinical picture frequently differed from that usually seen before sulfanilamide was known. This sometimes resulted in operation being delayed until a more serious complication had intervened to call attention to the mastoid. In order to evaluate the masking effect of chemotherapy, I have tabulated the patients upon whom I operated for mastoiditis during the past 2 years who were treated with sulfanilamide or its derivatives from the time of onset of the ear infection. In order not to confuse the picture, I have excluded from this group those patients who received the drug only after the acute otitis media was well established or perhaps when operation seemed imminent. The age of the patients ranged from 2 to 53 years. Eight cases had a myringotomy, while in 2 cases there was a spontaneous perforation of the drum. A simple mastoidectomy was done in from 9 to 28 days after the ear was opened, with an average of 18 days. Only 2 patients in the group were hospitalized shortly after the onset of the ear infection, the others preferring to remain at home until it became apparent that the condition was not going to resolve spontaneously.

Read before the Section on Eye, Ear, Nose, and Throat Diseases of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

From the Department of Otolaryngology, University of Pittsburgh School of Medicine.

TABLE I

No.	Sex	Age	Weight	Drug Dosage (Gr.)		Myringotomy	Spontaneous Perforation	No. of Days Before Operation	Culture of Mastoid
				Day	Total				
1.	F	25	90	40	600	Left		16	Hemolytic Streptococcus
2.	F	39	130	60	780	Right		13	Streptococcus (not plated)
3.	F	7	50	20	380	Left		19	Nonhemolytic Streptococcus
4.	F	53	132	80	640		Left	9	Nonhemolytic Streptococcus
5.	F	8	53	30	440	Left		23	Hemolytic Streptococcus
6.	M	7	55	40	540	Bilateral		11	Staphylococcus
7.	M	43	160	60 (Sulfanilamide)	420 (Sulfanilamide)	Right		28	Sterile
				40 (Sulfapyridine)	635 (Sulfapyridine)	Bilateral		28	Right—Sterile
8.	F	7	48	50	1050				Left—Staphylococcus Albus (hemolytic)
9.	M	2	26	30	250		Left	21	Nonhemolytic Streptococcus
10.	F	52	140	80	1340	Bilateral		11—Right 18—Left	Right—Staphylococcus Left—Sterile

Table I gives the details of treatment and the result of cultures from the 12 mastoids. It will be noted that 3 cultures were sterile, a fact encountered more frequently since the advent of chemotherapy. Table II lists the classical signs and symptoms of an operative mastoid. Of these, 3 were present in each case, namely, sagging of the posterosuperior canal wall, reduction of hearing, and persistence of aural discharge. Mastoid tenderness was present in only one-third of the cases, while pain and insomnia were absent in 8 of the 10 patients. Constitutional signs such as fever and anorexia were also notable by their absence, occurring in only 4 patients of the group. The roentgen ray was more reliable than the last mentioned signs, since it showed cell destruction in almost every case. As a general rule, however, the amount of bone necrosis found at operation exceeded that seen on the roentgen-ray film, which agrees with Dr. Law's dictum about sulfanilamide-treated cases.

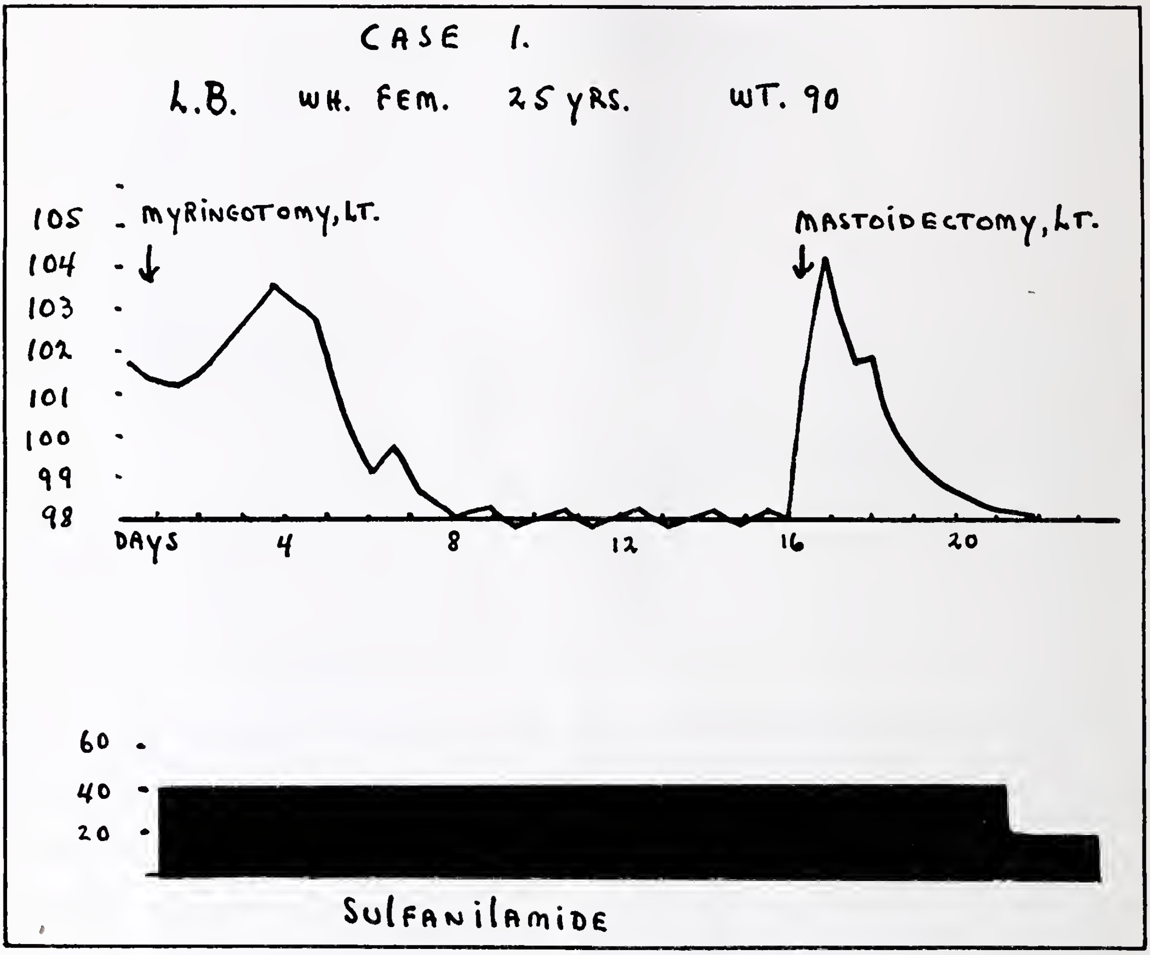
Three of the cases in the series require a little more elaboration:

Case Reports

CASE 1.—L. B., white female, age 25. Sulfanilamide was given in minimal doses which kept the patient symptom-free and the temperature at a normal level right up to the time when it was decided to open the mastoid. On the morning of the operation, however, the temperature shot up to 104.3 F., and a perisinuous abscess was uncovered. The history and course of this case suggested the pneumococcus Type III infection,

TABLE II

No.	Mastoid Tenderness	Sagging Postero-superior Canal Wall	Hearing Reduction	Aural Discharge	Pain and Insomnia	Fever and Anorexia	X-Ray	W.B.C.
1.	—	+	+	+	—	—	+	14,000
2.	—	+	+	+	—	—	+	11,500
3.	—	+	+	+	—	+	+	11,000
4.	+	+	+	+	+	+	+	16,000
5.	—	+	+	+	—	—	+	9,000
6.	+	+	+	+	+	+		32,000
7.	—	+	+	+	—	+	+	
8. Rt. Lt.	—	+	+	+	—	—	+	17,000
9.	+	+	+	+	—	—		12,000
10. Rt.	—	+	+	+	—	—	+	25,600
10. Lt.	+	+	+	+	—	—	+	33,200



but the culture of the mastoid revealed a pure strain of hemolytic streptococcus. Recovery was uneventful.

Case 7.—A. C., colored male, age 43. Sulfanilamide was given during the first week after myringotomy, but when there was a recrudescence of fever the drug was changed to sulfapyridine. A history of undulant fever several years previously complicated the picture, but the agglutination test and blood culture were negative. The temperature remained at a normal level until the fourth week, when it again assumed a septic character. The sulfapyridine was increased without effect, and then stopped altogether to make certain that the fever was not due to the drug. A simple mastoidectomy was done, and scattered areas of pus and cell destruction were found separated by fairly normal bone. Despite the septic type of temperature, culture of the mastoid was sterile. The middle ear continued to discharge, although the temperature was within normal limits and the patient had no complaints. During the seventh week there was a return of fever and facial paralysis developed on the right side. Sulfapyridine was given again without effect, and a modified radical mastoidectomy was then performed. Subsequently the facial paralysis cleared up completely, and convalescence from that point, while slow, was satisfactory. This case is typical in that the infection continued to smolder in the mastoid despite persistent sterile cultures from the blood and mastoid cavity.

Case 10.—M. A., white female, age 52. A left simple mastoidectomy had been done by the author 6 years ago, with uneventful recovery. At that time the white cell count was 11,100 with 58 per cent polymorphonuclears and 44 per cent mononuclear leukocytes. The patient remained well until April, 1940, when she developed a bilateral acute otitis media for which a bilateral myringotomy was performed. The white count at this time was 13,800 with 85 per cent mononuclear leukocytes. During the course of sulfanilamide therapy the white count rose to 30,600 with 80 per cent mononuclears, and it has remained at a high level, with minor fluctuations, to the present time. A double mastoidectomy was performed with subsequent recovery and the return of normal hearing. The medical consultant has found no clinical signs of leukemia, and to date the hyperleukocytosis remains unexplained. The serology is negative and the patient is entirely free from symptoms. This case is reported because hyperleukocytosis during the course of chemotherapy has been reported only when acute hemolytic anemia has been present.

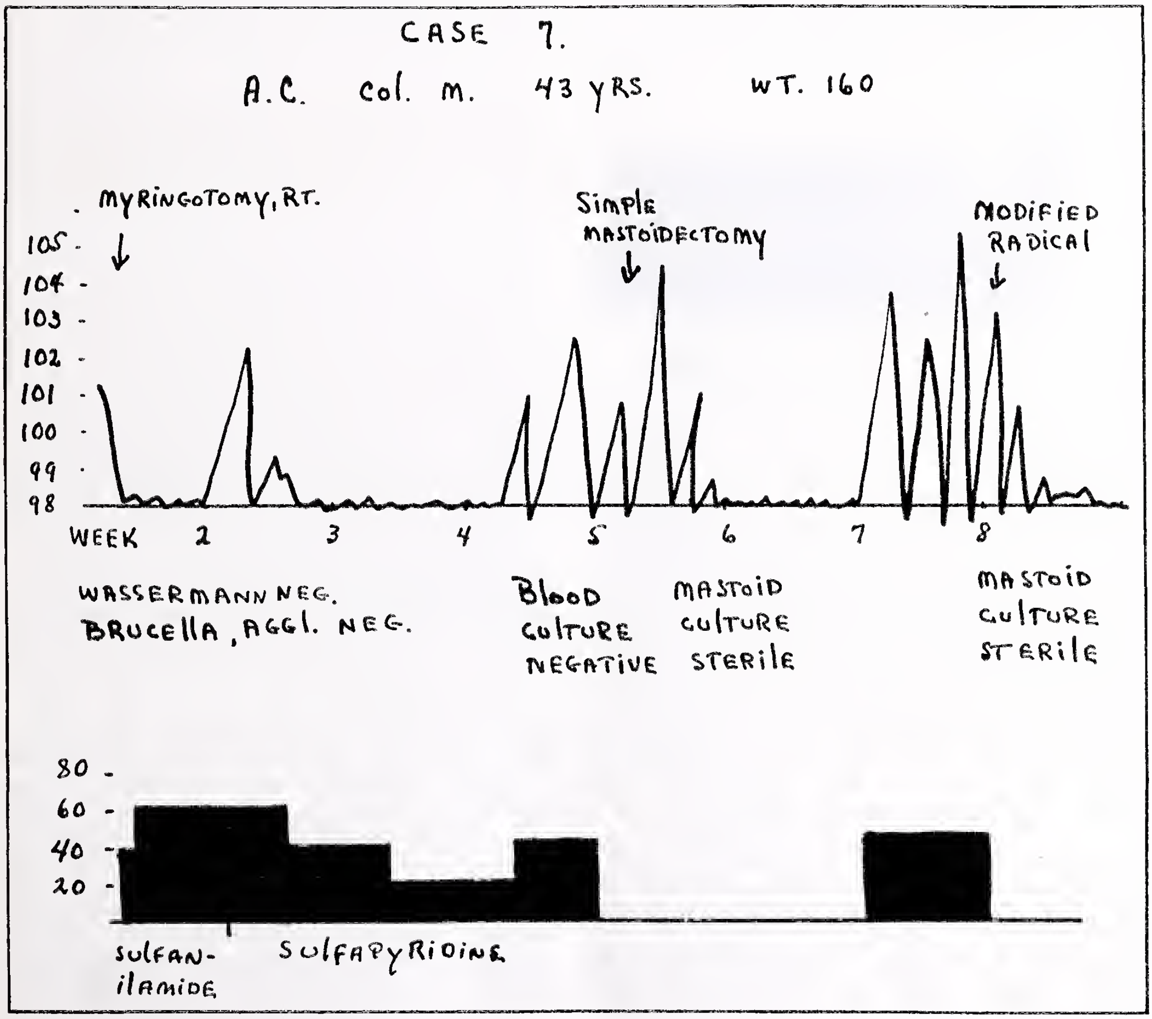
From this tabulation it is evident that in the individual case it is usually possible to follow the course of a threatening mastoiditis with the assurance that the infection and the chemotherapeutic agent can be kept in their proper place. It may be said that the latent course which the disease often pursues is to the patient's advantage, insofar as sulfanilamide and its derivatives seem to favor localization and to prevent systemic absorption of the infection. However, an increased alertness is demanded of the clinician if he is to avoid overconfidence in these drugs. Constitutional signs are much less common now, making an operative mastoid seem often like a cold abscess, while mastoid tenderness, once one of the old stand-bys, has been relegated to the pitcher's place in the batting order.

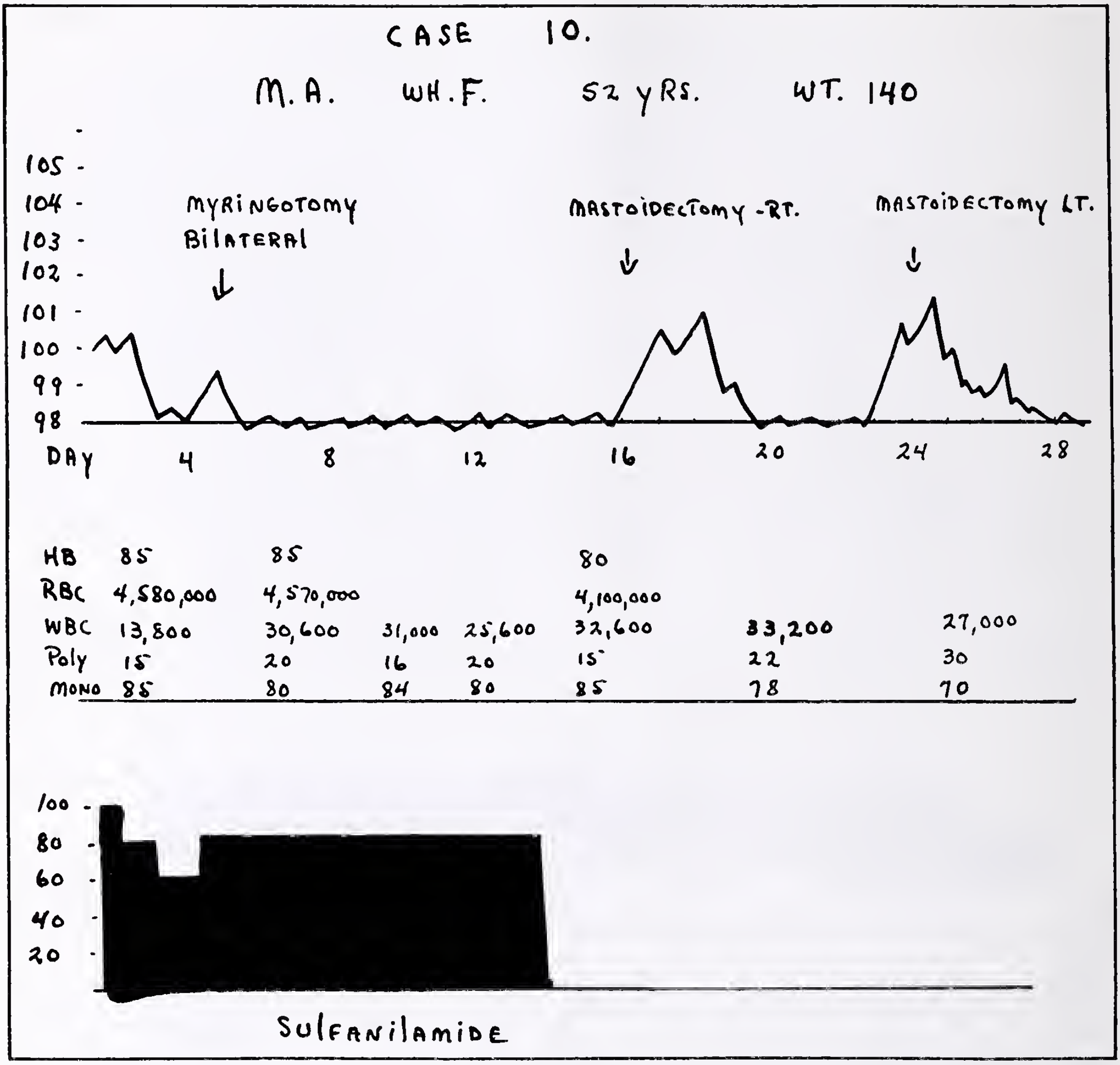
Next in importance to its use in the treatment of otitis media is the use of chemotherapy in acute infection of the pharynx. Here the resolution of the infection is often more rapid than in the case of ear infections, so that convalescence is considerably shortened. On the other hand, the publicity given to these drugs has made the name streptococcic sore throat almost meaningless. When we do see it, however, we know that we can often get the patient well in a matter of days rather than weeks. Likewise the complications of acute throat infections have been reduced markedly by the use of sulfanilamide and its derivatives.

In the treatment of sinusitis, results have been less gratifying. Chronic sinusitis is not affected at all by the use of the drugs. However, I have seen several cases of acute infection respond rapidly to chemotherapy. These were all patients with pansinusitis and profuse purulent nasal discharge—the kind generally made worse by local treatment. Such patients have a fever of 101 F. or higher, they look and feel quite ill, and culture of the nasal secretion usually yields a hemolytic streptococcus. Sulfapyridine or sulfathiazole are the drugs of choice here, because of their broader coverage. In a few days' time it will be seen that the nasal discharge has almost disappeared, and frequently the patient has escaped a complicating otitis media to which he has been subject in the past.

In summary, it may be said:

1. That, despite the masking effect of chemotherapy, careful and prolonged observation will usually enable the otologist to distinguish be-





HB	85	85			80		
RBC	4,580,000	4,570,000			4,100,000		
WBC	13,800	30,600	31,000	25,600	32,600	33,200	27,000
Poly	15	20	16	20	15	22	30
MONO	85	80	84	80	85	78	70

tween effects due to the drug and those produced by the infection.

2. The most important signs of mastoiditis during the course of chemotherapy are sagging of the posterosuperior canal wall, reduction of hearing, and persistence of aural discharge.

3. Mastoid tenderness and constitutional signs are more often absent than present during the administration of the drugs.

4. The use of chemotherapy in certain acute infections of the nose and throat has been briefly indicated.

ABSTRACT OF DISCUSSION

THOMAS B. MCCOLLOUGH (Pittsburgh): The subject of chemotherapy is still so new that it will take the observations of many workers to iron out some of the difficulties which still persist.

I can take no real exception to any of the points which Dr. Hampsey has brought out in his paper, and would, therefore, rather spend the few minutes allotted to me in emphasizing some of the points and possibly adding one or two of my own. I think the essayist's observation on the masking of the classical symptoms of mastoiditis in patients who have been treated with sulfanilamide is extremely important.

We otologists should emphasize, too, to our medical colleagues the importance of careful observation of these patients even after they apparently have recovered. I am sure that we have all seen late complications occur in these cases in spite of the fact that they have been carefully observed.

In regard to interpretation of roentgen-ray films of mastoids in patients treated with sulfanilamide, I cannot quite agree with Dr. Hampsey that the pathology in the mastoid pictures is quite as easy to evaluate as his paper would lead us to believe. I have seen and made so many faulty interpretations of these types of films that I consider the clinical aspect of the case far more important.

We all recognize the value of sulfanilamide in the treatment of hemolytic streptococcic meningitis. However, I cannot, say so much for sulfapyridine in the treatment of Type III pneumococcic meningitis.

The reason for many of the failures possibly lies in the fact that the Type III pneumococcus pours out and fills the dural or subdural spaces with a thick tenacious exudate. Eventually it is this exudate and pressure that defeats us. I have treated 3 or 4 cases of Type III pneumococcic meningitis this past year. One of them made a very nice recovery. The others, however, after a very prolonged illness, during which they were treated with large doses of sulfapyridine, surgery, etc., did not do quite so well. They died.

If we could find some agent which would thin out this exudate, I think we might get some real results with this disease. It is my belief that this thick exudate prevents the sulfapyridine from being as effective in the treatment of pneumococcic meningitis as is sulfanilamide in the treatment of hemolytic streptococcic meningitis.

I have had so little experience with the use of sulfathiazole that I do not feel qualified to discuss this drug at the present time. However, I would like to make a few observations. About 2 months ago I had a consultation with Dr. Perrin Long and he asked me if I had been using sulfanilamide as a local treatment in discharging ears. I told him no, but decided that I would try it. So for the past 2 months I have been using sulfanilamide and sulfathiazole powder locally in the postoperative treatment of radical and modified radical mastoid cases, and the results have been gratifying. I intend to continue with this form of treatment in chronic suppurative ears and feel that we will be better able to discuss its merits after further observation. It is, I believe, worthy of trial.

THE FEDERAL FOOD, DRUG, AND COSMETIC ACT

Federal Law Applies to Physicians' Prescriptions, Also Certain Medicines Dispensed

Theodore G. Klumpp, M.D.
Washington, D. C.

New Drug Experimentation Restricted to Qualified Experts

The new Federal Food, Drug, and Cosmetic Act, which became fully effective on July 1, 1940, is an expression of the authority conferred on Congress in the interstate commerce clause of the Constitution. All drugs that move in interstate commerce, including exports and imports, or are manufactured or sold in the District of Columbia or any of the territories, are within the jurisdiction of the act and are subject to its provisions. In many instances drugs dispensed by physicians or on a physician's direction are within the scope of the law. Even though the actual prescription of a drug may be a purely local transaction, the drug prescribed is subject to the federal law when it moves across a state line or is held for sale after such movement or is sold in the District of Columbia or a territory. However, Congress has provided certain exemptions for drugs in this class, both by direct legislative action and by the regulation making authority delegated to the administrator of the law. For a complete statement of the provision of the law, the reader is referred to the text of the act and regulations issued to date. A copy of these may be obtained on application to the Food and Drug Administration. Likewise, a discussion of features of the act that are of particular interest to the medical profession is contained in an article which appeared in *The Journal* on Dec. 16, 1939.*

From the numerous inquiries that have been received, it is evident that the application of the law to drugs dispensed on a physician's prescription or by a physician himself is not understood by all concerned. It seems desirable, therefore, to present a summary of those provisions of the law which must be met even after full advantage is taken of the exemptions provided by the act and its regulations. The summary to be given applies only when a drug is dispensed by or on the written prescription of a physician, dentist, or veterinarian who is licensed by law to prescribe the drug in question. It does not apply to a drug dispensed in the course of the conduct of a business of dispensing drugs pursuant to diagnosis by mail. In this case all the provisions of the act without exception or exemption are applicable. Likewise, all the provisions of the act pertain when the labeling of a drug bears such information as will result in the repurchase and continued use of the drug by lay users without the direction and supervision of the physician who prescribed it or any other physician. Obviously it was the intent of Congress that substantial exemptions from the full labeling requirements of the act should be extended only to drugs which are bona fide prescription items and which are, in fact, available only on the direction of a physician. It is evident, therefore, that labeling or other printed matter which operates to circumvent this purpose shall, by the same token, serve to negate the fundamental condition on which the exemptions are granted.

Having taken full advantage of the exemptions, the following provisions still apply to drugs dispensed by physicians or on physicians' prescriptions:

1. A new drug, as defined in the act, may not be dispensed even on the prescription of a physician unless a new drug application filed with the Administrator of the Federal Security Agency has become effective. This does not mean that a qualified expert may not administer a new drug for investigational purposes after compliance with the regulations of section 505 (i) of the law.

2. The labeling of the drug shall not be false or misleading in any particular [section 502 (a)].

3. The label of the drug dispensed on the written order of a physician shall bear [section 503 (b)]:

> *(a)* The name and place of business of the dispenser.
>
> *(b)* A serial number identifying the drug dispensed and connecting it with the physician's prescription kept on file by the dispenser or the dispenser's record of the transaction or both.
>
> *(c)* The date of the prescription.
>
> *(d)* The name of the physician, dentist, or veterinarian who wrote the prescription.

Law Discourages Refills and Unrestricted Usage

4. Where the physician's prescription is marked as "not refillable" or refilling is prohibited by state or local law, the labeling of the drug dispensed need not bear a statement of the name and quantity or propor-

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* KLUMPP, THEODORE G.: The New Federal Food, Drug, and Cosmetic Act—A Consideration of Features That Are of Particular Interest to the Medical Profession, *J. A. M. A.*, 113: 2233-2235 (Dec. 16) 1939.

tion of alpha eucaine, barbituric acid, beta eucaine, bromal, cannabis, carbromal, chloral, coca, cocaine, codeine, heroin, marihuana, morphine, opium, paralydehyde, peyote or sulfonmethane, or any chemical derivative found to be and by regulation designated as habit forming, nor the statement "Warning—May be habit forming." For the present, it is our interpretation that the physician may direct in writing that such a prescription be filled more than once, provided the number of times is precisely stated and it is also clearly marked in writing as not refillable beyond the number of times so stated. The regulations designating habit-forming derivatives of the substances mentioned are expected to be promulgated shortly. After they are issued, physicians may obtain a list of them by application to the Food and Drug Administration.

5. Regulations under section 502 (f) (1) exempt drugs dispensed by or on the prescriptions of physicians from the necessity of carrying directions for use, under specified conditions, since it may be assumed that the physician prescribing the drug will convey to his patient in detail the specific individually indicated directions for use. Applications for potent new drugs intended to be sold on physicians' prescriptions will not be permitted to become effective when the labeling bears any directions whatever that may serve to encourage unsupervised use.

6. Section 502 (f) (2) provides that the labeling of drugs in general shall bear such adequate warnings against use in pathologic conditions or by children when its use may be dangerous to health, or against unsafe dosage or methods or duration of administration or application, in such manner and form, as are necessary for the protection of users. Here again it may be assumed that the physician will provide his patient with warnings which will be more specific and comprehensive than anything which can be given in a general way on the labeling of drugs. Where such warnings are given and are adequate to protect the user, the purpose of the act will presumably be accomplished in most instances without resort to a statement on the labeling which would be superfluous and repetitious. However, the statute itself provides no exemption from the requirement that adequate warnings appear in the labeling.

As indicated previously, if a drug is dispensed in such form and manner and under such labeling as will enable the user to repurchase the article and continue to use it indefinitely and perhaps recommend it to friends, obviously under such circumstances only such warnings on the labeling will be adequate which will in themselves fully protect the user.

7. The law provides that official drugs shall be packaged and labeled as prescribed in the official compendiums, and in the case of unofficial drugs the administrator is authorized to prescribe by regulations such packaging and such label statements as are necessary for the protection of the public health. These regulations have not yet been issued. For the present, it may be presumed that where such packaging and labeling requirements are essential for the protection of the public health they will apply to drugs dispensed on the written prescription of a physician.

8. A drug coming under the jurisdiction of the act may not be dispensed if it is dangerous to health when used in the dosage or with the frequency or duration prescribed, recommended, or suggested in the labeling thereof. Ordinarily it may be assumed that a physician will not prescribe such a dangerous drug. However, instances may arise in which the medical profession as a whole condemns the use of a drug as dangerous and despite this consensus of condemnation an individual, oblivious to such danger, may wish to administer the drug. In such a case the safeguard of the law cannot be withheld. Its effect would be to close the channels of interstate commerce to the drug. An example of this is the drug dinitrophenol, which is not now available in interstate commerce. The same applies to the so-called elixir of sulfanilamide, in which the toxic element was the solvent diethylene glycol and not the sulfanilamide.—*J. A. M. A.*, Mar. 1, 1941.

AMERICANS OF 1840 COULD DRINK QUART OF WHISKEY A DAY

The American of 1840 could drink nearly a quart of whiskey (29 ounces) every day and still keep his health and live to a good old age, but the average American of today cannot, Dr. Norman Jolliffe, of New York University, told the American Association for the Advancement of Science.

The immunity of our great grandfathers to the diseases of alcohol was due to their superior intake of vitamin B, Dr. Jolliffe explained. The vitamin deficiency that scientific study has recently demonstrated to be the real basis of the so-called alcoholic diseases is due not so much to an absolute lack of vitamin B_1 as it is to a vitamin intake which is too low in proportion to the calories. Increasing the calories consumed by experimental animals that are getting too little vitamin B_1 only increases their liability to deficiency disease. Those that eat too few calories are safest.

The average American of drinking age today consumes more than 200 calories every day just from his alcohol in addition to the nonalcoholic calories in his drink and the calories in his food. This extra 200 calories cuts the important ratio between vitamin B_1 and calories from the alcohol-free 3.32 to 3.13. This means an 18.2 per cent reduction in the already slim margin of safety for this vitamin.

The average American of 1840 had a ratio of 7.2 and a margin of safety of 230 per cent.

It is a mistake, Dr. Jolliffe emphasized, to assume from the recent demonstration of the part of vitamin B deficiency in alcoholic diseases that alcohol itself is harmless—a mistake made by those opposed to drinking as well as those who like it. Although these diseases do unquestionably develop as a direct result of nutritional deficiency, he said, it is the consumption of too much alcohol and too little food that is responsible for the nutritional lack.

The alcohol acts in still another way to cut down the individual's ration of vitamin B_1—by irritating the intestinal tract so that food is lost or avoided.—*Science News Letter*. Dec. 28, 1940.

* * *

Nothing is more important at the present time than to continue and to intensify the campaign against tuberculosis and against syphilis, and I hope that no one will permit his attention to be swayed from the objectives we have in mind, because the fight against these diseases is more important at a time of crisis as a measure of national defense than it is in normal times.—Frank C. Boudreau, M.D.

EDITORIALS

GERIATRICS AND UROLOGY

A noteworthy recent development in medicine is the great increase of interest in the diseases afflicting the aged. Serious efforts have been made to create a special division of medicine, analogous to pediatrics, and to give to it the name of geriatrics. These efforts may indeed be justified by the increased average life span, and by the consequent increase in the proportional number of elderly people in the population.

In reading various articles on the subject of geriatrics, one is impressed—and distressed—by the slight attention paid to the diseases of the urogenital tract. All physicians should be brought to recognize as often as possible the fact that urologic disease is one of the important scourges of old age. Prostatic obstruction alone afflicts, in greater or less degree, about one-half of all elderly men, and chronic urinary infections, due to stenoses of the urethra or ureters, are common and often very serious in elderly women.

It should constantly be borne in mind that a large number of the diseased conditions we think of as peculiar to old people are really the end stages or sequelae of diseased conditions beginning much earlier in life and persisting through the presenile years. If we, as physicians, keep this fact in mind, we may hope to accomplish more in the way of preventive geriatrics. For example, it is apparent to all who have studied the subject that the women who have suffered through middle life with chronic, recurrent cystitis are the ones who in old age develop pyonephrosis, with or without calculi, or chronic pyelonephritis, with serious permanent damage to the kidneys. Now, as Goldblatt and others have shown, we must regard this type of renal disease as probably the cause of many cases of arterial hypertension. As more and more instances of hypertension are studied, it becomes constantly clearer that the causative renal changes are of an irreversible and therefore incurable character. Patients cannot benefit from this advance in our knowledge unless we translate it into an increased vigilance through the earlier years of life to detect urinary infections, and an increased determination to cure them when found, no matter how radical means may have to be taken. In such fashion might hypertension, to say nothing of the serious renal conditions of old age, be prevented.

In men, old age is often made hideous by the extreme manifestations of prostatic urinary obstruction. In such cases the danger signals have usually been flying for years, but no one has paid attention. When, after perhaps a decade of greater or less discomfort, embarrassment, broken rest, and gloomy apprehension, the luckless victim is finally haled before the surgeon and found to have calculi of the bladder or kidney, or both, diverticula of the bladder, heavily infected urine, and seriously diminished kidney function, he stands a flaming example of completely preventable disease. All his troubles are due to a pure and simple mechanical condition, namely, obstruction to the free outflow of urine. The purest and simplest way to relieve this mechanical condition is to remove the obstruction mechanically, and this we know results in complete cure if done before the kidneys are destroyed by back pressure. Patient and physician only too often seek desperately to evade these clear and insistent facts. In so doing they have built up certain deceptions, which have done untold harm, and which must be exposed and denied as strongly and as often as possible. Among them the following should be specified:

First, the deception that a weak urinary stream and a nocturnal frequency of from 1 to 5 times a night are normal for men over 50 years of age.

Second, the deception that prostatic massage is an effective method for preventing prostatic hypertrophy.

Third, the deception that prostatic massage, irrigations of the bladder, and urethral dilatation with sounds constitute a good and effective treatment for prostatic urinary obstruction.

Fourth, the deception that surgical treatment of prostatic obstruction is not indicated until complete urinary retention occurs.

Fifth, the deception that the surgical treatment of prostatic obstruction is highly dangerous, and therefore only to be recommended as a last resort.

Each one of these propositions is a complete and diametrical reversal of the truth, and it is a tragic pity that they have become so firmly imbedded in the minds of so many physicians. Let us try to replace them with other statements which approach, at least, more nearly the truth:

First, urinary frequency is not normal at any age.

Second, prostatic massage does not prevent prostatic hypertrophy, but probably hastens it.

Third, prostatic massage, irrigations of the bladder, and dilatations of the urethra constitute at best only symptomatic treatment for prostatic obstruction, as such are often unsuccessful, and in fact do as much harm as good, probably more.

Fourth, surgical removal of a prostatic obstruction should be carried out as soon as definite obstruction is demonstrated, and before any damage is done to the kidneys and remainder of the upper urinary tract.

Fifth, prostatic surgery, if performed competently and upon patients in reasonably good condition, is very safe and successful. A death rate above 5 per cent signifies incompetence. Following prostatectomy, there are permanent good results in 85 to 90 per cent; following transurethral resection, imperfect results are a little commoner, perhaps 15 to 20 per cent. Over and against these results must be balanced the facts that without surgery no case of prostatic obstruction is ever cured, that without surgery the fatal termination may be delayed, but it is at length inevitable, and that, while without surgery the patient may survive a long time, his life is only too often compounded of increasing discomfort and disability, and is but a progressive descent into uremia.

Little can be done toward the prevention, and nothing toward the cure, of the degenerative diseases of old age; we should, therefore, be all the more anxious to relieve the aged of the added burdens imposed by a mechanical, and therefore perfectly curable, condition such as urinary obstruction.

PREPAREDNESS SPELLS ANNOYANCE AND SACRIFICE

Since adequate medical service for "armed forces" is a primary essential and our nation is rapidly adding a million men to the Army and Navy, the physicians of the nation are being harassed by assignments and requests. The assignments are falling first on the younger practitioners through their previously existing military connections and experience. Requests for information which may in many instances lead to early assignments to active military or secondary defense services are currently the lot of all physicians. Witness in this issue of the Journal references to the "wind-up" of the American Medical Association questionnaire to all Pennsylvania physicians as well as the introduction to them of the county-state questionnaire more specifically designed to meet local needs arising from the ever-increasing withdrawal of physicians from home practice to service with the colors. These are the assignments that so often "spell sacrifice" and leave in their wake the "annoyances" to the physicians remaining at home.

What are some of the annoyances met by as many types of reaction as there are differing personality types among the physicians?

First, the most widespread but the most fleeting are the various questionnaires to be completed.

Second, the absorption of the added professional service arising from the absence in the national service of neighborhood physicians and those who ordinarily would serve as residents in hospitals.

These by-products of medical preparedness lead to others, e.g., (a) Uncle Sam may rule that income tax calculations apply to fees collected by the *locum tenens* of the absent physicians and again to that portion turned over by the former to the latter; (b) in one 200-bed general hospital in Pennsylvania, sans intern or resident, the visiting staff not only attend to "the day's work" but take turns sleeping at the hospital in anticipation of the night's work.

And so it goes and will continue to go until the sacrifices and annoyances of today become the routine of tomorrow and both governmental and community medical service will be delivered in the traditional professional spirit.

READ THE EVIDENCE

No matter what the outcome of the A. M. A. trial is, no one can accuse the organization of trying to conceal any part of the charges from its own members.

Beginning with the issue of Feb. 15, 1941, and continuing to date, the *Journal of the American Medical Association* has been publishing installments of the proceedings at Washington. Although these reports are not verbatim, they are sufficiently inclusive to give readers a full account of what is taking place.

It is our understanding that these weekly installments will continue until all the evidence has been presented to the members of the association.

We commend to every physician a careful reading of this transcript. It is long and may strike you as tiresome in spots. Nevertheless, in no other way can you fully appreciate what is taking place in the field of medical economics today—not in England or Russia or some other country thousands of miles away, but right here at home in the Capital City of the United States of America.

EIGHTH COUNCILOR DISTRICT OPPORTUNITY

A scientific session will be an important feature of the forty-ninth annual conference and meeting of the Pennsylvania Tuberculosis Society which will be held at Erie on Apr. 16 and 17. This session will be held Wednesday evening, Apr. 16, at 8 o'clock at Hamot Hospital.

The president of the Erie County Medical Society is James A. M. Russell, M.D., and the chairman of the Committee on Tuberculosis is Melchior M. Mszanowski, M.D. Russell S. Anderson, M.D., medical director of the Erie County Tuberculosis Hospital, is a member of the program committee for the conference.

Two outstanding physicians will be guest speakers. Louis H. Clerf, M.D., Philadelphia, will discuss "The Use of Bronchoscopy in Tuberculosis and Other Bronchopulmonary Diseases." Dr. Clerf is professor of laryngology and bronchoscopy in Jefferson Medical College. Walter L. Rathbun, M.D., superintendent of Newton Memorial Hospital at Cassadaga, N. Y., will speak on "Tuberculosis of the Lungs in the Younger Age Groups."

The session on the afternoon of Apr. 16 at the Lawrence Hotel will also be of special interest to physicians. "A Comparative Study of Available Methods of Roentgen-Ray Examination" will be presented by W. Edward Chamberlain, M.D., professor of radiology and roentgenology at Temple University Medical School, Philadelphia. Robert E. Plunkett, M.D., general superintendent of tuberculosis hospitals in New York State, will speak on "The Tuberculosis Clinic as a Diagnostic and Consultation Center for the General Practitioner of Medicine."

The tuberculosis aspect of public health in relation to national defense preparations will be emphasized in the program. Delegates will visit the Erie County Tuberculosis Hospital and also the preventorium conducted by the Erie County Health and Tuberculosis Association.

AN OUTSTANDING LEADER

Richly deserved recognition was extended at a testimonial dinner given for Philip F. Williams, M.D., at the Union League, Philadelphia, on Thursday, Feb. 13, by the Committee on Maternal Welfare of the Philadelphia County Medical Society. The occasion was planned in honor of his splendid leadership and work in maternal welfare, which has been definitely reflected by the great progress made under the sponsorship of the maternal welfare committees of his own county, state, and national medical societies.

The toastmaster was Norris W. Vaux, M.D., professor of obstetrics, Jefferson Medical College, and the speakers included: Hon. John J. Shaw, M.D., Secretary of Health of the State of Pennsylvania; Hubley R. Owen, M.D., Director of Health of Philadelphia; George William Kosmak, M.D., editor of the *American Journal of Obstetrics and Gynecology;* William Bates, M.D., vice-president of the Philadelphia County Medical Society; and Clifford B. Lull, M.D., associate professor of obstetrics, Jefferson Medical College.

The attendance was approximately 225, including many distinguished out-of-town guests such as Miss Katharine F. Lenroot, chief of the Children's Bureau, U. S. Department of Labor, Washington, D. C.; Nicholson J. Eastman, M.D., professor of obstetrics, and Richard W. Telinde, M.D., professor of gynecology, Johns Hopkins University; Robert E. Seibels, M.D., chairman of the Committee on Maternal Welfare of South Carolina; Herbert P. Ramsey, M.D., assistant professor of obstetrics and gynecology at George Washington University; Max Schneider, M.D., chairman of the Committee on Maternal Welfare of Brooklyn, N. Y.; Paul Dodds, M.D., chief of the Bureau of Maternal and Child Health, Pennsylvania Department of Health; Mr. William Skirball, president of the Special Pictures Corporation, who sponsored the sound film, "The Birth of a Baby"; and Louis H. Douglass, M.D., professor of obstetrics, University of Maryland.

Dr. Williams was presented with a watch and chain, which was inscribed as follows: "Presented to Doctor Philip F. Williams, on February 13, 1941, by his friends in appreciation of his work as Chairman of the Committee on Maternal Mortality."

THE NURSING SITUATION IN PENNSYLVANIA

Catherine Ammerman Bell, R.N.,
and
Mrs. Katherine Miller, R.N.

Will we be short of nurses as we were in 1917?

The whole nursing situation is different from the picture presented in 1917-1918. At that time there were 66,107 registered nurses in the United States. This is about twice the number actively registered in Pennsylvania in 1940. Over 33,000 registered nurses saw service either at home or abroad in the federal nursing services or the Red Cross. Among this number there were about 3000 nurses from Pennsylvania. In 1918 there were 1579 schools of nursing and the graduates that year numbered 13,288; in Pennsylvania there were only 11,606 graduate nurses.

What is the situation in the United States in 1940?

The federal services are expanding. By July, 1941, the Army Nurse Corps Reserve will have over 4000 nurses actively caring for the health needs of soldiers in the camp and station hospitals. These nurses are enlisting for a period of one year's service with a salary beginning at $70 a month and full maintenance. Troops from the various corps areas will have nurses from the same areas in their camp hospitals. There will be 16 of these hospitals opened at various stations during the month of January. The Inidan Bureau is planning for another 164 nurses, some for public health; the greater number, however, are for hospital positions. The expansion of the Veterans Administration during this year calls for an additional 2250 nurses. In all, the federal services will require 6433 nurses from various parts of the United States.

As the industrial program expands and more men are employed, the manufacturing plants are adding industrial nurses to their staffs. The calls for specially prepared nurses for public health and hospital positions are greater than the supply for this highly qualified group.

Today, the membership in the American Nurses' Association numbers over 161,000 registered nurses. There are 1303 schools of nursing in the United States. This is about a 25 per cent decrease from 1918, but the number of graduates last year was 23,600 as compared with 13,288 in 1918. Pennsylvania has 120 schools and an enrollment of over 8300 students at the present time.

The Nursing Council on National Defense, made up of representatives of the American Nurses' Association, the National Organization for Public Health Nursing, and the National League of Nursing Education, is making a study of the situation and has recommended "That a carefully selected group of schools be asked to expand their resources and that efforts be made to secure state or federal funds for this purpose."

What is the nurse strength of Pennsylvania?

According to the A. M. A., there are 354 hospitals in Pennsylvania with a bed capacity of 93,755. If we assume that in the event of a national emergency the hospitals would be filled to bed capacity—and I think we can estimate even greater needs when we realize that in Great Britain for every soldier killed there are 40 civilians killed or wounded—and each patient should have a minimum of 3 hours of nursing care in 24 hours, we would need 36,408 nurses on an 8-hour schedule, or 28,126 nurses on a 10-hour schedule. We are not losing sight of the fact that in a national emergency it may be necessary for nurses to work longer than 8 or 10 hours a day, but we are basing our estimate on an accepted standard. Not all of the nursing will be done in hospitals, and if one public health nurse is needed for every 2000 persons during present conditions, then this ratio can be applied. The population in Pennsylvania, according to the 1940 United States Census, was 9,891,709 and we should need 4946 nurses for the public health field. A total of 41,354 graduate registered nurses would be needed for hospital beds filled to capacity and the public health field.

At the time of the 1930 United States Census there were 25,361 "trained nurses" and 10,163 "untrained nurses" in Pennsylvania. We have been advised that the 1940 Census figures on occupation would not be available until the end of this year. But, we do know that Pennsylvania has 32,210 actively registered nurses as of November, 1940, and a complete registration of over 50,000. This latter figure includes married and other inactive nurses who could be called into service as needed. Refresher courses are being planned to equip them for service in their own communities in whatever capacity they will be able and willing to assist. Enrollment in schools of nursing has increased about 10 per cent in the past year to meet the demands of the increased daily census.

What are the social and economic factors that affect nursing?

Changes in population will affect the kinds of nurses needed and their distribution. We learn that cities are growing less rapidly, that people are of necessity moving into the smaller community or rural areas. Fewer children are being born, and this means less maternity nurses and less care of children with the contagious diseases of childhood. On the other hand, there seems to be an increase in the conditions which incapacitate children for normal active childhood. The span of life has been lengthened, and this means more older people with chronic heart and kidney conditions and points to the establishment of homes for the aged where physical care will be needed and careful supervision of the health needs of this age group will become a responsibility. More nurses will be needed who can work in rural areas, assisting with an educational program of health and providing nursing care in more or less isolated areas in the homes or smaller hospitals.

From 1930 to 1937 there has been an 18 per cent increase in the number of hospital beds, and government hospitals in this same time increased on an average of 21,000 beds a year. Communities have been advised to plan facilities for the care of specialties under one roof rather than increase the number of hospitals so that only one set of diagnostic laboratories need be available, and one administrative department.

Increased enrollment in group hospitalization plans has meant an increased demand on hospital services. This is noted particularly in the maternity services and surgery. This means that there is less demand for nursing in the home. A great deal of nursing in the home has been maternity care, but now more babies are being born in the hospitals due to participation in group insurance and the use of flat rates.

We are told that only one-sixth of the families in the United States have an income of over $2500 a year. In 1929 the private duty nurse was employed for 60 per cent of the hospital patients having an income of $10,000 a year, and for only 6 per cent of the patients when the income was only $1200 a year. In 1937 a survey showed that only 1 per cent of the patients with incomes under $3000 had the services of a private duty nurse and that for those with incomes of over $3000 only 12 per cent availed themselves of this service. From this we would conclude that there is less employment for the private duty nurse. The average yearly income for a nurse in this field is $800.

As a result of the Social Security program, health services have been expanded. More public health nurses are needed. Since 1931 there has been an increase of 20 per cent in the number of nurses employed by official agencies. There is a definite trend for public health work to be taken over by federal, state, county, and municipal agencies.

The 8-hour day, as recommended by the American Nurses' Association, is gradually being accepted in the fields of private duty and institutional nursing. The public health nurses have been fortunate enough to operate under such standards for a number of years. The prevalence of the 8-hour day varies with geographic areas and is influenced by many factors, chief among which is the economic one of providing an adequate nursing service with low state appropriations.

While there are fewer demands for private duty nurses, the field of general duty has greatly enlarged. Today a typical hospital with a school of nursing employs 10 general duty nurses. In 1932 a study was made and 63 per cent of hospitals having schools of nursing did not employ general duty nurses; another study in 1937 revealed that only 10 per cent do not now employ general duty nurses.

We are aware of what may occur again following a "war boom"—a situation in which greater numbers of nurses would be without employment and hospitals would be forced to close wings or buildings because of less financial support or less need of luxurious services. Let us not be hasty in establishing short courses or in increasing the number of nurses beyond our estimated needs.

The Pennsylvania State Nurses' Association has studied the situation of the subsidiary worker in Pennsylvania, and believes that there is no need to increase the number of persons in this field or to increase the range of their duties to include procedures requiring a knowledge of nursing. We are aware of the schools for practical nurses in the state and feel that these schools are a hazard to the community, because of the short courses which they give, because of the lack of experience of their students under supervision, and because of their rapid graduation of so-called "nurses" who have been, at the best, only briefly exposed to the care of the sick. Such schools should be under the supervision of the State Board of Nurse Examiners.

The Pennsylvania State Nurses' Association is embarking on an active legislative program. The proposed law will provide for: (1) licensure of all who nurse for hire in 2 groups—the graduate registered nurse and the licensed attendant, (2) regulation of all schools training nurses of any kind, (3) biennial registration, and (4) earmarking the funds paid into the State Treasury in nurses' fees for the use of the State Board of Examiners for Registration of Nurses.

A complete plan of organization for this effort—field work, and a public information program—has been outlined by the secretary of the State Legislative Committee, and a copy of the licensure bill has been sent to every member of the State Nurses' Association. What every nurse in the state can do to bring about a successful completion of the program is described in the December issue of *Penn Points,* which goes to each member of the association.

INSTITUTE OF INDUSTRIAL MEDICINE AND INDUSTRIAL HYGIENE

May 5, 6, 7, 8 and 9, 1941
Hotel William Penn, Pittsburgh, Pa.

The American Association of Industrial Physicians and Surgeons and the American Industrial Hygiene Association have prepared the following program for their annual meeting in recognition that conservation of man power in industry is a most vital part of our national defense program. In view of this, the Institute of Industrial Medicine and Industrial Hygiene offers an intensive graduate course in present-day industrial health problems to all physicians, industrial hygiene engineers, and nurses who may have contracts with our industrial organizations.

Monday, May 5, 1941

REGISTRATION—No fee.

9:00-10:00	Hotel William Penn.

LECTURES AND DEMONSTRATIONS

Mercy Hospital, Stevenson and Locust Streets, Pittsburgh

John P. Griffith, M.D., Chairman

10:00-12:30	Mercy Hospital staff.
12:30- 1:30	Lunch.
1:30- 4:00	Mercy Hospital staff.

(Monday will be devoted to a series of dry clinics in industrial medicine and surgery at Pittsburgh's Mercy Hospital.)

Tuesday Morning, May 6, 1941
Urban Room, Hotel William Penn

9:00	Address of Welcome. Hon. Cornelius D. Scully, Mayor, City of Pittsburgh.
9:15	Address of Welcome. Frederick M. Jacob, M.D., President, Allegheny County Medical Society.
9:25	Address of Welcome. John J. Shaw, M.D., Secretary of Health, Commonwealth of Pennsylvania.
9:35	Response. Daniel L. Lynch, M.D., President of the American Association of Industrial Physicians and Surgeons.
9:40	Response. Warren A. Cook, President of the American Industrial Hygiene Association.

ANNUAL MEETING

American Association of Industrial Physicians and Surgeons

9:45-10:10	President's Address, Daniel L. Lynch, M.D.
10:10-10:30	"Some Practical Results of Periodic Physical Examinations." A. J. Kammer, M.D., Medical Director, Inland Steel Company, Indiana Harbor, Ind.
10:30-10:40	Discussion.
10:40-11:00	"Relation of Trauma to Disease." Alexander H. Colwell, M.D., Associate Professor of Medicine, School of Medicine, University of Pittsburgh.
11:00-11:10	Discussion.
11:10-11:40	"Contact Dermatoses." William H. Guy, M.D., Professor of Dermatology, School of Medicine, University of Pittsburgh.
11:40-12:00	Discussion.
12:30- 2:00	Luncheon and exhibits.

Tuesday Afternoon, May 6, 1941

2:00- 2:20	"Sequelae of Head Injuries." Samuel S. Allen, M.D., Pittsburgh.
2:20- 2:30	Discussion.
2:30- 2:50	"Trauma Other Than Fractures." John H. Wagner, M.D., Carnegie-Illinois Steel Corporation, Pittsburgh.
2:50- 3:00	Discussion.
3:00- 3:20	"Mental Hygiene in Industry." Charles H. Henninger, M.D., Professor of Psychiatry, School of Medicine, University of Pittsburgh.
3:20- 3:30	Discussion.
3:30- 3:50	"Evaluation of Circulatory Function in Extremities." Murray B. Ferderber, M.D., Department of Industrial Hygiene, School of Medicine, University of Pittsburgh.
3:50- 4:00	Discussion.
4:00- 4:30	Business session.
4:30- 6:00	Exhibits.

Tuesday Evening, May 6, 1941

INDIVIDUAL GROUP CONFERENCES*

Wednesday Morning, May 7, 1941

9:00- 9:20 “Medical and Preventive Aspects of Carbon Monoxide Poisoning.” Frank S. Rossiter, M.D., Carnegie-Illinois Steel Corporation, Pittsburgh.
9:20- 9:30 Discussion.
9:30-10:00 “Recent Investigations of Effects of Radiation from an Ophthalmologic Viewpoint.” Charles F. Kutscher, M.D., Pittsburgh.
10:05-10:35 “The Absorption and Excretion of Ingested Lead Under Various Experimental Conditions.” R. A. Kehoe, M.D., Kettering Laboratory of Applied Physiology, University of Cincinnati, Cincinnati, Ohio.
10:40-11:05 “Engineering Control of Lead-Contaminated Environments.” G. C. Harrold, Ph.D., Industrial Hygiene Laboratories, Chrysler Corporation, Detroit, Mich.
11:10-11:25 To be announced.
11:30-11:45 “Lead Exposures in the Printing Industry.” R. T. Homewood, Virginia Department of Health, Richmond, Va.
11:50-12:05 “Incidence of Lead Poisoning in the City of Baltimore.” E. Kapland, Ph.D., and J. M. McDonald, M.D., Baltimore Health Department, Baltimore, Md.
12:05-12:20 Discussion.
12:20- 2:00 Luncheon and exhibits.

Wednesday Afternoon, May 7, 1941

2:00- 2:20 “Tuberculosis and Its Allied Conditions as Commonly Seen in Our Industrial Population.” Charles H. Marcy, M.D., Director, Tuberculosis League Hospital, Pittsburgh.
2:20- 2:40 “Relationship Between Tuberculosis and Inhalation of Various Substances from a Pathologic Standpoint, Including Bituminous Coal Dust Inhalation.” Samuel R. Haythorn, M.D., Director, Singer Laboratory, Allegheny General Hospital, Pittsburgh.
2:40- 2:50 Discussion. R. R. Sayers, M.D., Director, U. S. Bureau of Mines, Washington, D. C.
2:55- 3:20 “Engineering Preventive Methods in the Control of Tuberculosis.” D. E. Cummings, Director, Division of Industrial Hygiene, University of Colorado, Denver, Colo.
3:20- 3:35 To be announced.
3:40- 4:00 “Control of Tuberculosis and the Employment of a Tuberculous Individual in Industry.” W. A. Sawyer, M.D., Medical Director, Eastman Kodak Company, Rochester, N. Y.
4:00- 4:10 Discussion.
4:10- 4:35 “Bacteria in Air and Disinfection.” A. E. Williamson and H. B. Gotaas, Department of Sanitary Engineering, School of Public Health, University of North Carolina, Chapel Hill, N. C.
4:35- 4:50 “Variation in Bacterial Population in Certain Ventilating Systems.” A. Hollaender, Ph.D., National Institute of Health, Bethesda, Md.
4:50- 5:00 Discussion.
5:00- 6:00 Exhibits.

Wednesday Evening, May 7, 1941

6:30 BANQUET.
“The Rôle of Industrial Medicine and Industrial Hygiene in National Defense.” Irvin Abell, M.D., Chairman of Health and Medicine Committee, Federal Security Agency, Washington, D. C.
“Noise and Hearing.” V. O. Knudsen, Ph.D., Dean of the Graduate School, University of California, Berkeley, Calif.
Westinghouse Quartet.
Music.

Thursday Morning, May 8, 1941

8:30- 8:50 “Design of Lateral Exhaust Hoods for Industrial Gases, Vapors, and Fumes.” L. Silverman, Sc.D., Harvard School of Public Health, Boston, Mass.
8:55- 9:15 “Ventilating for Electroplating Operations.” A. D. Brandt, Ph.D., National Institute of Health, Division of Industrial Hygiene and Sanitation, Bethesda, Md.
9:15- 9:25 Discussion.
9:25- 9:50 “Air-borne Infection and Disinfection in Air Conditioning.” W. F. Wells, University of Pennsylvania, Philadelphia.
9:55-10:20 “Local Cooling of Workers in Hot Atmospheres.” F. C. Houghten and M. B. Ferderber, M.D., American Society of Heating and Ventilating Engineers, Pittsburgh.
10:25-10:50 “Radiant Cooling.” C. P. Yaglou, Harvard School of Public Health, Boston, Mass.
10:50-11:05 Discussion.
11:05-11:20 “Comparison of Quick Methods for Quantitation of Impinger Samples of Granite Dust.” C. L. Poole, Rhode Island State Department of Health, Providence, R. I.
11:25-11:40 “An Immersion Method for the Rapid Approximation of Quartz in Granite.” W. B. Wardlow, Texas State Board of Health, Austin, Tex.
11:45-12:00 “Use of X-Ray Diffraction Equipment to Determine Silica in Dust Exposures.” J. W. Ballard, Ph.D., U. S. Bureau of Mines, Pittsburgh Experiment Station, Pittsburgh.
12:00-12:15 General discussion.
12:15- 1:30 Luncheon and exhibits.

Thursday Afternoon, May 8, 1941

1:30- 1:45 “The Effects of the Inhalation of Dusts Encountered in the Chrome Brick Industry.” William B. Fulton, M.D., and Frank E. Butters, M.D., Division of Industrial Hygiene, Pennsylvania Department of Health, Harrisburg.

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* See Tuesday evening program for general practitioners sponsored by The Medical Society of the State of Pennsylvania, page 920.

1:50- 2:05 "Engineering Survey in Tri-State Lead and Zinc Mining District." E. C. Warkentin, Oklahoma State Department of Health, Division of Industrial Hygiene, Oklahoma City, Okla.

2:10- 2:30 "Exposure to Silica Dust in Open Pit Mining Operation and Dust Conditions in Crushing Plant." R. T. Pring, Utah Copper Company, Salt Lake City, Utah.

2:30- 2:40 Discussion.

2:40- 2:55 "Etiologic Aspects of Particle Size in Quartz Dust." B. D. Tebbens, Sc.D., and R. Schultz, Harvard School of Public Health, Boston, Mass.

3:00- 3:20 "Particle Sizes of Dusts as Found in Various Industries and Determination of Silica in Bituminous Coal Dusts." H. H. Schrenk, Ph.D., U. S. Bureau of Mines, Pittsburgh Experiment Station, Pittsburgh.

3:20- 3:30 Discussion.

3:30- 3:45 "Animal and Petrographic Studies on Talc Dusts." C. Williams, Liberty Mutual Insurance Co., and R. Schultz, Harvard School of Public Health, Boston, Mass.

3:50- 4:05 "Fuller's Earth as a Cause of Pneumoconiosis." W. D. McNally, M.D., Consulting Toxicologist, Chicago, Ill.

4:10- 4:35 "Silicosis Among Naval Foundry Men." E. W. Brown, M.D., and W. E. Klein, M.D., Medical Corps, U. S. Navy.

4:35- 5:00 Discussion.

5:00- 6:00 Exhibits.

Thursday Evening, May 8, 1941

7:30- 8:00 "Review of Industrial Hygiene Progress During 1940." Warren A. Cook, President, American Industrial Hygiene Association.

8:00- 8:15 "Claims of Industrial Poisoning." P. N. Harger, Ph.D., Professor of Biochemistry and Toxicology, University of Indiana, School of Medicine, Indianapolis, Ind.

8:20- 8:35 "Medicine and Engineering Evaluation of Exposures in the Synthetic Sausage and Casing Industry Using the Viscose Process." M. H. Kronenberg, M.D., Division of Industrial Hygiene, Illinois Department of Health, Chicago, Ill.

8:40- 8:55 "Sampling and Determination of Aldehydes." E. C. Barnes, Industrial Hygiene Laboratory, Westinghouse Electric and Manufacturing Company, East Pittsburgh.

9:00- 9:25 "The Absorption and Elimination of Noxious Vapors." H. W. Haggard, M.D., Director of Laboratory of Applied Physiology, Yale University, New Haven, Conn.

9:25 Discussion.

Friday Morning, May 9, 1941

8:30- 8:45 "Dermatitis Control in a Mass Production Industry." T. F. Mooney, Ford Motor Co., Dearborn, Mich.

8:50- 9:05 "Sporotrichosis as an Occupational Disease Among Florists." L. W. Spolyar, M.D., Indiana State Board of Health, Industrial Hygiene Division, Indianapolis, Ind.

9:10- 9:35 "A Statistical Approach in the Study of Hematologic Data from Some Common Solvent Exposures." J. H. Sterner, M.D., Eastman Kodak Co., Rochester, N. Y.

9:40- 9:55 "Recovery Following Exposure to Benzol." L. J. Goldwater, M.D., New York University, Department of Preventive Medicine, New York City.

9:55-10:10 Discussion.

10:10-10:30 "Electric Arc Welding, Coated Rods." C. P. McCord, M.D., S. F. Meek, M.D., and G. C. Harrold, Ph.D., Industrial Hygiene Laboratories, Chrysler Corporation, Detroit, Mich.

10:35-10:55 "Gases, Fumes, and Vapors from Coated Welding Rods." B. D. Tebbens, Sc.D., and Philip Drinker, Harvard School of Public Health, Boston, Mass.

10:55-11:05 Discussion.

11:05-11:25 "Trends in Occupational Disease and Industrial Hygiene." H. B. Meller, Sc.D., and F. S. Mallette, Air Hygiene Foundation, Mellon Institute, Pittsburgh.

11:30-11:50 "The Human Eye and Its Protection in Industry." W. H. Lehmberg, Sc.D., American Optical Company, Southbridge, Mass.

11:50-12:00 Discussion.

12:00- 1:30 Exhibits.

Friday Afternoon, May 9, 1941

ANNUAL MEETING, SECOND SESSION

1:30- 2:00 Election of officers.

2:00- 2:15 "Controlled Radium Hazards." Frederick Flinn, Ph.D., Columbia University, New York City.

2:20- 2:35 "Some Recent Observations on Phosphorus Toxicology." R. B. L. Fleming, Tennessee Valley Authority.

2:40- 2:55 "Biochemistry of Carbon Bisulfide." Howard McKee, M.D., Harvard School of Public Health, Boston, Mass.

2:55- 3:10 Discussion.

3:15- 3:30 "Toxicity of 1-1 Dichlor-1-nitroethane." Willard Machle, M.D., Kettering Laboratory of Applied Physiology, University of Cincinnati, Cincinnati, Ohio.

3:35- 3:50 "Acute Toxic Effects Upon Experimental Animals of Methyl, Ethyl, and Butyl Methacrylates." Wilhelm Deichmann, Ph.D., Kettering Laboratory of Applied Physiology, University of Cincinnati, Cincinnati, Ohio.

3:55- 4:10 "Toxicity of Methyl Silicate." W. G. Fredrick, Ph.D., Industrial Hygiene Bureau, Detroit, Mich.

4:15- 4:30 Discussion.

4:30 Business meeting (annual).

Deaths from Selected Causes in Pennsylvania

December, 1940

County	All Causes, Excluding Stillbirths	Still-births	Infant Deaths	Maternal Deaths	Cancer	Cerebral Hemor-rhage	Heart Disease	Nephritis	Pneu-monia	Tuber-culosis
Adams	34	1	3	0	6	0	15	3	0	1
Allegheny *	1327	52	90	3	122	108	407	114	98	45
Armstrong	44	2	2	0	6	6	13	3	1	0
Beaver	124	12	7	0	11	19	34	5	7	5
Bedford	29	2	4	0	2	1	5	8	1	0
Berks *	222	9	20	0	28	16	78	16	8	6
Blair	157	4	12	0	20	8	45	20	9	1
Bradford	45	1	4	0	2	2	16	3	4	0
Bucks	95	2	4	0	8	6	51	9	0	2
Butler	68	3	5	0	14	7	17	3	3	1
Cambria *	204	13	27	0	21	10	60	23	19	5
Cameron	6	0	0	0	0	0	3	2	0	0
Carbon	55	0	2	0	6	3	17	8	3	2
Centre	59	7	6	0	4	9	17	3	2	2
Chester *	133	2	9	1	15	14	38	13	5	4
Clarion	22	1	3	0	0	3	8	2	2	0
Clearfield	81	6	12	0	8	11	19	7	5	1
Clinton	37	2	6	0	1	4	12	4	2	0
Columbia	42	2	4	0	3	3	15	5	0	1
Crawford	82	0	3	0	11	15	23	7	4	1
Cumberland	72	2	2	1	9	9	20	13	2	1
Dauphin *	183	0	14	1	16	13	65	22	9	5
Delaware	250	8	15	0	37	20	84	22	7	1
Elk	29	2	7	0	1	1	8	3	1	0
Erie *	191	4	11	0	25	18	52	15	11	5
Fayette	181	10	29	0	15	17	50	13	9	2
Forest	4	0	0	0	1	0	3	0	0	0
Franklin *	63	3	4	1	7	4	17	12	4	1
Fulton	7	0	0	0	0	1	2	2	1	0
Greene	40	4	6	0	0	7	9	7	3	1
Huntingdon	36	0	5	0	2	2	9	4	4	2
Indiana	69	4	7	0	9	9	21	7	4	0
Jefferson	37	1	3	1	5	1	10	4	2	0
Juniata	13	2	2	0	0	1	7	2	2	1
Lackawanna	316	16	25	0	28	21	100	29	6	14
Lancaster	231	5	18	1	31	14	82	10	6	7
Lawrence	81	4	6	0	10	11	17	10	1	1
Lebanon	85	6	5	0	5	11	20	10	3	2
Lehigh *	197	12	15	0	25	15	50	17	14	6
Luzerne	403	17	26	1	44	18	127	43	23	11
Lycoming	103	3	8	0	12	11	41	9	7	0
McKean	52	2	3	0	6	5	15	3	1	1
Mercer	113	2	10	0	9	15	25	10	11	1
Mifflin	58	4	9	0	3	2	20	8	8	1
Monroe	34	1	1	0	3	2	19	1	2	0
Montgomery *	275	10	17	2	38	19	77	17	8	9
Montour *	25	1	5	0	5	0	10	1	3	0
Northampton	149	0	9	1	19	16	53	9	4	3
Northumberland	118	3	10	0	9	9	40	10	10	3
Perry	31	1	3	0	5	7	5	6	2	1
Philadelphia *	2004	47	97	3	285	140	694	155	94	87
Pike	6	0	0	0	2	0	1	2	0	0
Potter	17	1	3	0	3	0	4	3	0	0
Schuylkill	216	12	16	2	18	16	63	20	20	12
Snyder *	19	1	0	0	2	2	9	2	1	1
Somerset	69	3	10	0	5	4	19	5	4	4
Sullivan	6	1	0	0	1	2	0	1	0	0
Susquehanna	36	1	0	0	2	8	16	1	1	0
Tioga	39	0	3	0	2	5	10	3	1	0
Union	12	1	1	0	2	0	5	0	0	0
Venango *	66	2	5	1	7	8	15	5	2	0
Warren *	42	4	2	0	6	4	14	2	2	0
Washington	172	6	17	0	19	19	44	13	13	8
Wayne *	29	2	1	0	2	3	11	3	1	0
Westmoreland *	196	11	13	1	17	21	68	14	7	4
Wyoming	14	2	1	0	0	1	4	3	0	1
York	153	8	15	1	17	15	48	17	7	3
Institutions	190	0	0	0	10	8	46	11	24	39
State Total	9598	350	682	21	1067	780	3022	837	518	315

*** Exclusive of deaths in state and federal institutions.**

TUBERCULOSIS ABSTRACTS

A Review for Physicians

PREPARED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Published through the co-operation of the Pennsylvania Tuberculosis Society
and The Medical Society of the State of Pennsylvania

EXPERIMENTERS have worked to devise a means of making chest roentgenograms of groups of people, economically and at a rapid rate. Last year approximately 490,000 students received special service which, in most cases, included a roentgen-ray examination. Industrial groups are demanding a similar service. Mobilization for military training has further focused attention on mass methods of roentgen-ray examination. S. Reid Warren, Jr., of the Moore School X-ray Laboratory here presents brief comments of 6 methods now in use. Estimates of costs and weights are averages from which particular data may differ. The choice of methods depends, of course, on the particular task to be done.

CHEST ROENTGEN-RAY METHODS

Stereoscopic 14 by 17 inch Films

This is the best single method of chest roentgen-ray examination. It requires expensive ($4000 to $5000), bulky (1000 pounds) equipment which must be permanently installed in conjunction with an adequate system to supply electric power to it (230 volts, 35-150 amperes alternating current). Exposure times from 1/30 second to 1/10 second are generally used. A specially equipped darkroom is required to process the films. Two films (unexposed film—$1.50) are required for each examination. It is difficult to make exposures, process the films, and examine them fast enough to use this excellent method for mass surveys. The excellence of this method is the result of (1) high contrast within the diagnostic area or each roentgenogram, (2) small unsharpness or blurring of shadow borders, (3) convenient size for direct viewing, and (4) stereoscopic perception (Fig. 1).

Single 14 by 17 inch Films

The same kind of roentgen-ray generating apparatus is used for producing stereoscopic and single chest roentgenograms. The auxiliary equipment for making single films is less complicated and bulky. Apparatus has been constructed which can be carried in a truck and assembled to examine groups. One film (unexposed—$0.75) is required for each examination. Advantages of this method are (1) high contrast, (2) small unsharpness of shadow borders, and (3) convenient size for viewing (Fig. 1).

Rolls of Paper 14 by 17 inch

Rolls of paper 14 inches wide and about 150 feet long coated on one side with a photographic

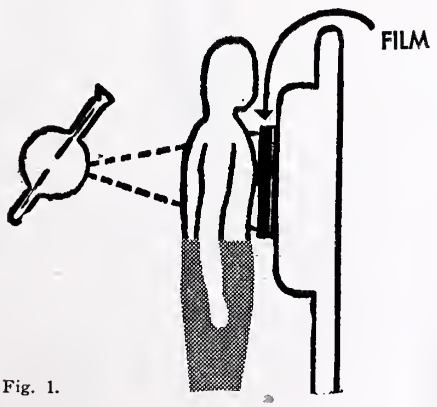

Fig. 1.

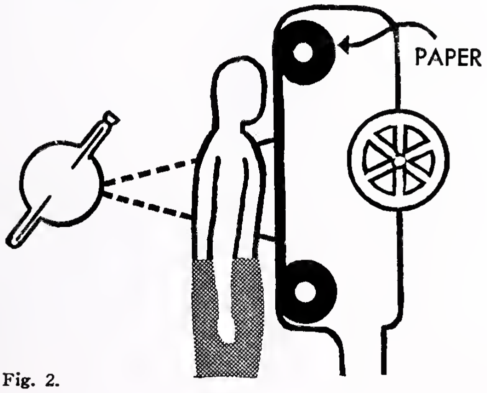

Fig. 2.

emulsion are used for this method, which was devised specifically for surveys. A roll of paper is mounted within a light-tight mechanism which is arranged so that, after the first roentgenogram is made near one end, the paper can be moved about 18 inches in preparation for the second exposure. After 100 exposures are made, the roll is removed and processed in special equipment. The roentgenograms are viewed by reflected light in a viewing device in which the roll of paper can be mounted. The roentgen-ray apparatus and technic for paper are practically equivalent to those used for 14 by 17 inch film, though slightly more exposure is required for paper. The contrast in paper is less than in film, although the diagnostic value appears not to be seriously compromised by this deficiency. Apparatus is transportable in a truck, rate of exposure is high (100 per hour), and examination of the roentgenogram is quick and convenient. The company which has developed this method supplies all apparatus and delivers completed roentgenograms to the physician for $0.75 to $1.00 per patient (Fig. 2).

Photofluorograms

In these methods, roentgen rays pass from the tube through the patient to a (14 by 17 inch) fluorescent screen which is thus caused to emit light. A photographic camera is focused upon the fluorescent screen in order to record the pattern of areas of varying brightness of light produced on the screen by roentgen rays. The screen, lens, and photographic film must be as fast as possible in order not to require excessive roentgen-ray exposure. High-voltage generating equipment like that used for 14 by 17 inch film is required for photofluorography. Using screens and cameras now available, the unsharpness or blurring of shadow borders is greater in photofluorograms than in 14 by 17 inch roentgenograms.

The lens used to make 4 by 5 inch photofluorograms is expensive ($1000). The 4 by 5 inch film is large enough to view without magnification. These films can be processed more conveniently than 14 by 17 inch film; the cost (one processed film, $0.06) and filing space are far less for the smaller (4 by 5 inch) film. Four inch film in rolls is not available.

The lens generally used to make 35 mm. photofluorograms is an f : 1.5 lens of the type used in miniature cameras. The 35 mm. photofluorogram must be enlarged for clear viewing. Rolls of film can be exposed and processed by means of easily available photographic equipment; the cost (for each processed film, $0.02) of film for each exposure is of course very small.

These methods are being studied in order to find means of overcoming the low contrast and gross unsharpness which are their chief disadvantages (Fig. 3).

Fluoroscopy

Apparatus for fluoroscopy is relatively inexpensive ($800) and it requires a relatively low power input (10 volts, 10 amperes alternating current). The physician examines the fluorescent image of the chest in a darkened room and records his opinion. Thus there is no permanent record which can be re-examined by others. The contrast and sharpness of the fluoroscopic image are greatly inferior to those of a good 14 by 17 inch roentgenogram. The physician is subjected to scattered roentgen rays during the examination. This may be dangerous in a mass survey (Fig. 4).

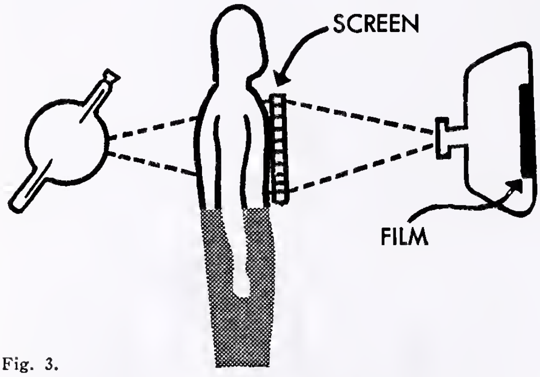

Fig. 3.

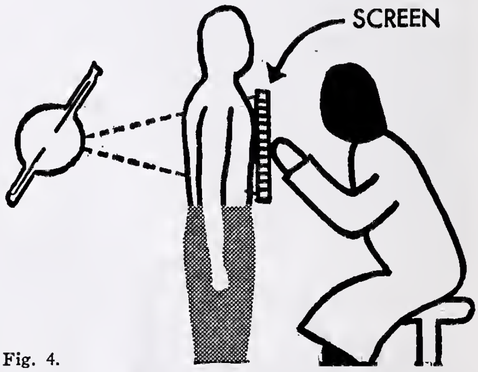

Fig. 4.

No roentgen-ray survey method is an adequate substitute for a complete roentgen-ray examination of the chest. The purpose of a survey is to segregate as accurately as possible those subjects whose chests are normal and those subjects who should be referred to a roentgenologist for a complete examination because of suspicious shadows seen by the physician who conducts the survey.

Pennsylvania Tuberculosis Society
311 S. Juniper St., Philadelphia
Room 508

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, ***Secretary***
8104 Jenkins Arcade
Pittsburgh, Pa.

LOCUM TENENS AGREEMENTS SHOULD BE SPECIFIC

We quote from the minutes of the Feb. 4, 1941, meeting of the Board of Trustees of The Medical Society of the State of Pennsylvania introductory to a discussion of the subject and publication of two forms of agreement:

> President Borzell read correspondence between himself and our society's legal counselor regarding the possibility of dual payment of income tax; first, by physicians serving as locum tenens in the absence of physicians in military service; and, later, by the absent physician on his share of fees collected by the locum tenens. Dr. Mayock moved, seconded by Dr. Samuel, and unanimously carried, that at the conclusion of the discussion of this subject between Drs. Borzell, Donaldson, and the legal counselor, if found advisable, the outcome be widely dispersed. (The Executive Committee of the Board of Trustees at its meeting on Mar. 12 advised publication.)

The Federal Internal Revenue Department has ruled that where a physician simply takes over the practice of another under an agreement to pay a certain percentage of the cash collected to the absent physician, an income tax must be paid both on the total net collections of the locum tenens and again paid by the absent physician on the percentage of receipts turned over to him. The theory is that unless an existing agreement clearly indicates the contrary, the locum tenens is in effect purchasing a capital asset; namely, a practice, and that the sums which he pays to the absent practitioner are not deductible expenses.

Our society's legal counselor in submitting agreements Nos. 1 and 2 is attempting to make it clear that the arrangement is only for a specified period of time, and that the practice of the absent physician has not been purchased.

With no attempt to create the impression that such an arrangement will be acceptable to the Department of Internal Revenue, the attorney proffers the two agreements. In No. 1, whatever risk from a tax standpoint is involved, it shall be borne by the absent practitioner; in No. 2, by the locum tenens.

It is of course obvious in both suggested agreements that where the locum tenens is an established neighboring physician the clause covering the location for practice after the return of the absent practitioner is superfluous, but it would be applicable in all instances where an outside physician has been imported as locum tenens.

Two agreements are printed below. Although our legal counselor is unwilling to venture a definite opinion that either of them will be acceptable to the Department of Revenue, it is his opinion that they represent the best possible attempt to avoid the double taxation feature.

Agreement No. 1

......................, 1941.

Dear Dr. B:

I hereby employ you to take care of my patients from ...., 1941, to Dec. 31, 1941, both inclusive, and agree to pay you a salary of 40 per cent of the fees paid by my patients for medical attention rendered by you, and also agree to reimburse you for the actual expenses incurred by you in the care of my patients but not in excess of 10 per cent of the fees paid by my patients for medical attention rendered by you.

It is understood that this agreement may be terminated by either of us at any time upon .... days' written notice thereof given to the other, but, unless sooner terminated, shall continue for the above-mentioned period.

Upon the termination of this agreement it is understood that you will not engage in the practice of medicine or surgery within a radius of .... from ...., for a period of ....

If the above is acceptable to you, kindly indicate your acceptance thereof as indicated below.

Yours very truly,

Dr. A.

This .... day of ...., 1941, I accept the above employment upon the above-mentioned terms and conditions.

....
Dr. B.

Agreement No. 2

....................., 1941.

Dear Dr. B:

I hereby authorize you to take care of my patients from ...., 1941, to Dec. 31, 1941, with the understanding that you pay me 50 per cent of the fees paid by my patients for medical attention rendered by you, and with the further understanding that this authority shall terminate with the termination of this agreement, which may be terminated by either of us at any time upon .... days' written notice thereof given to the other, but this agreement unless sooner terminated shall continue for the above-mentioned period.

Upon the termination of this agreement it is understood that you will not engage in the practice of medicine or surgery within a radius of .... from .... for a period of ....

If the above is acceptable to you, kindly indicate your acceptance thereof as indicated below.

Yours very truly,
Dr. A.

This .... day of ...., 1941, I accept the above and agree to take care of the above-described patients upon the above-mentioned terms and conditions.

....
Dr. B.

NEEDED — A PUNCH CARD FOR EVERY U. S. M.D.

Beginning with the September, 1940, issue of The Pennsylvania Medical Journal, each issue has contained considerable data on progress in Pennsylvania of the medical preparedness phase of our National Defense Program. In the February issue, page 624, was published "the last call," a letter mailed Jan. 21 by the Pennsylvania Medical Preparedness Committee to 2208 Pennsylvania physicians (outside Philadelphia), under 66 years of age, county society members and non-members, who had failed to complete and return to Chicago headquarters the A. M. A. preparedness questionnaire.

On Feb. 27 the above number had been reduced to 960, for whom—quoting from the letter reproduced in the March Journal, page 751—"the committee will, to the best of its ability, from information at hand, complete A. M. A. questionnaires and forward them to Chicago as requested marked in red ink."

That this most recent national responsibility assumed last June by the House of Delegates of the American Medical Association (115,000 members) may not be completed for several years is demonstrated in the following observations:

> The A. M. A. census of physicians cannot be considered complete until a punch card shall have been made at the Chicago headquarters for all of the now known physicians in the United States.
>
> It will be necessary therefore to continue to add the names of newly licensed physicians, to remove the names of deceased physicians, to change, when indicated, the classification of physicians from general practice to a specialty, and to maintain a record of physicians assigned to duty and of physicians deemed essential for the continuance of medical education and the administration of the public health.

To the aforesaid 960 Pennsylvania physicians, as well as to the physicians of Philadelphia County who have to date failed to respond to the consistently continued efforts of the Philadelphia Preparedness Committee, the Pennsylvania Committee earnestly recommends a thorough search for one of the two A. M. A. questionnaires sent to each of them under first-class postage (a) in August, 1940, and (b) in January, 1941.

If unable to find either of these, why not write the Pennsylvania Preparedness Committee for another, rather than have the committee supply inadequate information in red ink?

Read the appended information relative to the number of physicians in each Pennsylvania county who had not on Feb. 27, 1941, returned their completed A. M. A. questionnaire. Then peruse carefully the Preparedness Committee's letter addressed on Mar. 11 to county medical society representatives, which appears on the opposite page. It contains food for thought for all.

Questionnaires Not Returned by Feb. 27

County Society	*Members*	*Non-members*
Adams	1	1
Allegheny	99	60
Armstrong	4	1
Beaver	7	8
Bedford	2	1
Berks	18	19
Blair	8	8
Bradford	1	5
Bucks	9	3
Butler	11	5
Cambria	23	6
Carbon	7	2
Centre	2	2
Chester	7	11
Clarion	1	1
Clearfield	8	0
Clinton	2	0

County Society	*Members*	*Non-members*
Columbia	4	2
Crawford	4	2
Cumberland*	17	3
Dauphin	21	1
Delaware	44	26
Elk	3	1
Erie	10	5
Fayette	11	9
Franklin	4	2
Greene	4	3
Huntingdon	2	1
Indiana	6	5
Jefferson	0	1
Lackawanna	43	15
Juniata	0	1
Lancaster	14	9
Lawrence	4	0
Lebanon	0	3
Lehigh	19	9
Luzerne	25	17
Lycoming	10	2
McKean	0	3
Mercer	1	1
Mifflin	1	2
Monroe	0	2
Montgomery†	35	36
Montour	1	1
Northampton	10	10
Northumberland	10	4
Perry	2	1
Philadelphia	333	383
Potter	1	1
Schuylkill	9	4
Somerset	5	2
Susquehanna	0	1
Tioga	1	1
Venango	7	2
Warren	1	0
Washington	10	12
Wayne-Pike	2	1
Westmoreland	30	15
Wyoming	2	0
York	8	4

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* Not clear on account of the possible confusion due to army physicians at Carlisle.

† Not clear on account of the question of residence of a few physicians practicing in Philadelphia.

LOCALIZING PENNSYLVANIA'S MEDICAL PREPAREDNESS

To Members of County Society Medical Preparedness Committee.

CC: President, Secretary, and Editor of Component County Medical Society.

The Pennsylvania Committee on Medical Preparedness has about concluded its endeavors to have all the physicians in Pennsylvania complete and return to the Chicago headquarters the A. M. A. preparedness questionnaire.

When our committee took over last October, less than 65 per cent of Pennsylvania physicians had responded. Through the unremitting co-operative efforts of many county society Committees on Medical Preparedness the percentage of returns on Feb. 27, 1941, was, exclusive of Philadelphia County, as follows:

From State Society members under 66 years of age—90 per cent returned.

From non-members under 66 years of age—83 per cent returned.

Figures in detail on these proportions are published, county by county, in the April issue of THE PENNSYLVANIA MEDICAL JOURNAL (see page 918).

Now comes the problem of obtaining and filing in the office of the secretary of each component county medical society in Pennsylvania and in the office of the secretary of the State Medical Society similar information in regard to the physicians of each county.

The prestige of all local medical selections should be maintained. Adequate service must be assured in response to each request forthcoming for the recommendation of physicians to meet all local medical service and industrial health needs.

The Medical Preparedness Committees of 43 of our component county medical societies have already initiated or nearly completed this essential movement; namely, Adams, Allegheny, Beaver, Berks, Blair, Bradford, Cambria, Carbon, Centre, Chester, Clearfield, Columbia, Crawford, Cumberland, Dauphin, Delaware, Elk, Fayette, Huntingdon, Indiana, Juniata, Lackawanna, Lancaster, Lebanon, Lehigh, Lycoming, McKean, Mercer, Mifflin, Montgomery, Montour, Northampton, Northumberland, Perry, Philadelphia, Potter, Schuylkill, Somerset, Susquehanna, Tioga, Venango, Washington, Wayne-Pike, and Wyoming.

To the representatives of the remaining county societies who may desire help in adopting this county questionnaire program, the undersigned committee offers assistance to the extent of preparing and mailing the necessary questionnaire to their membership.

The completed questionnaire is to be returned to the undersigned committee.

After certain information has been transferred from it to a State Society questionnaire, the completed county questionnaire will then be returned for filing to the proper representative of the county medical society.

In several Pennsylvania counties having but 20 to 30 physicians the withdrawal from private practice into military service of but 4 or 5 physicians has already created "adequate service" problems, and in other districts already there are proposals for the formation of "home guards" with medical phases, etc.

At least one of our component county medical societies has officially called attention to the "adequate service" problem in home and hospital practice occasioned by the development of a new (defense) industry in their county which brings 10,000 new people to the county.

Basic to adequately meeting the local health and sickness needs connected with all these and more is quite obviously the county and state medical society knowledge of the locality and population served, professional experience, willingness to expand same, etc., of every physician in every county.

The enclosed questionnaire when completed and returned by all physicians will supply your county society with these and other answers.

We have the information appended regarding your county as of 1938, but not the requisite details about each physician.

Awaiting the word from your committee to go ahead, our committee remains

Respectfully yours,

CHARLES H. HENNINGER, *Chairman,*
Pennsylvania Committee on Medical Preparedness.

Mar. 11, 1941.

PROGRAM FOR GENERAL PRACTITIONERS

In connection with the coming convention in Pittsburgh of the American Association of Industrial Physicians and Surgeons, program for which is printed in full in this issue of the Journal, the Committee on Industrial Health of The Medical Society of the State of Pennsylvania will sponsor a round-table conference on Tuesday evening, May 6, at 8 o'clock, in the Hotel William Penn.

The program will be provided by members of The Medical Society of the State of Pennsylvania and will take the form of four 15-minute papers on the following subjects, to be followed by a question and answer discussion period:

1. The general practitioner and the industrial physician as guardians of employee health in large industries.
2. The general practitioner as responsible health officer to small industries.
3. University aids to general practitioners serving industry.
4. Division of industrial hygiene aids to Pennsylvania physicians serving industry.

Needless to say, this program will fail in its purpose if it is not attended by physicians in general practice who are from time to time called upon to treat industrial injuries or diseases, and who should be at all times prepared to advise employers and employees in the smaller or neighborhood industries.

THE 1941 SESSION

The Committee on Scientific Work held its first meeting in Harrisburg, Feb. 4, 1941. The attendance of 15 members out of the total of 17 showed the interest in the work for the coming sessions. As tentatively arranged, the general sessions will be held Tuesday, Wednesday, and Thursday mornings beginning at 9:30. There will be 9 subjects discussed at these general sessions, several of which will have a bearing upon the round-table conferences which will take place Wednesday and Thursday mornings.

The round-table conferences, which have proven so popular in the past few years, will again be held, 6 in number. The subjects to be discussed will be office gynecology, blood dyscrasias, chemotherapy, infectious diseases (particularly influenza, pneumonia, measles, meningitis, and scarlet fever), geriatrics, and treatment of wounds. The subject of chemotherapy, which was on the program for 1940, is repeated because of new data gathered this year. The chairmen, or keymen of all these subjects, have been selected and are outstanding teachers in the medical schools of our state.

The general sessions will include such subjects as "Sedatives, Their Use and Abuse," "Diagnosis and Treatment of the Unconscious Patient," "Emotion and Body Changes," "Advances in the Treatment of Arthritis," "Interpretation of Abdominal Pain," and "Arterial Hypotension." The authors of these subjects have also been assigned.

Sixteen guest speakers, clinicians from other states, will take part in these meetings, 3 of whom will be heard at the general sessions. The subjects they will discuss will be "Problems of Aging," "The More Common Blood Dyscrasias," and "Common Errors in the Selection of Patients for Surgery." Three men of national reputation have accepted our invitations to discuss these important problems.

The problem of graduate teaching and education is one of such widespread interest and importance that an effort has been made to build and mold an intensive 3-day postgraduate course. The entire program will be comprehensive in scope and will naturally appeal to both the specialist and the general practitioner alike.

The 1941 meeting will be held in Pittsburgh, Oct. 7, 8, and 9. Although 5 months away, it is not too early for the members of our society to make tentative arrangements to attend the entire 3-day meeting.

DRAFT DEFERMENT AN INDIVIDUAL PROBLEM

Dr. William Mather Lewis,
Selective Service Director for Pennsylvania,
Harrisburg, Pa.

Dear Dr. Lewis:

Our committee is in receipt of communications which reflect the considerable concern with which physicians throughout the state view the coming on July 1, 1941, of the period when each medical student and intern must again be considered on an individual basis for deferment under the existing Selective Service System Act.

The chief worry seems to lie in the attitude likely to be taken by the members of the various draft boards, when such young men make inquiry of their respective boards, unless some official action is taken bringing specifically to their attention the fact that the Selective Service authorities well recognize the great difference in the value to national defense of a senior medical student or hospital intern as a private in the ranks in contrast with the same individual as a licensed practitioner of medicine, eligible for the Medical Reserve Corps.

The suggestion has been made, and no doubt already brought to your attention, that the hundreds of medical school graduates now completing their required training as interns in Pennsylvania hospitals, who will not have opportunity to take the state medical licensing board's 1941 examinations until after July 1, might readily with fairness be notified that their current deferment has been extended until after the completion of the examinations referred to.

We are well aware that this entire topic has been and is receiving every possible consideration from Selective Service System representatives in the various states as well as in Washington, but we nevertheless feel the need of having some official memorandum* from which to quote in replying to the inquiries received.

At a meeting of our committee held Feb. 27 in Pittsburgh, I was instructed to address this communication to you, as well as to send a copy to Dr. Irvin D. Metzger, chairman of the State Board of Medical Education and Licensure.

Thanking you in advance for your usual prompt co-operation, I am

Very truly yours,
C. H. HENNINGER, M.D., *Chairman,*
Pennsylvania Committee on
Medical Preparedness.

Mar. 5, 1941.

COMMONWEALTH OF PENNSYLVANIA
GOVERNOR'S OFFICE
HEADQUARTERS FOR SELECTIVE SERVICE
Post Office Box 92
Harrisburg, Pennsylvania

* MEMORANDUM.

SUBJECT: Classification of Registrants in Training on Preparation.

1. The following information received from National Headquarters is repeated for the guidance of local and appeal boards.

2. The proper classification of students and other registrants *in training or preparation* constitutes one of the major problems of the Selective Service System. Marked concern has been manifested by educators and other interested persons with respect to the status of students after July 1, 1941, particularly those students enrolled in professional, scientific, technical, or highly specialized fields of endeavor.

3. The group deferment of students provided by the act expires July 1, 1941, and it will, therefore, be necessary for local boards to reclassify all students now in Class I-D or I-E prior to July 1, 1941. In reclassifying students, all facts in the possession of the local board at the time of the student's classification in I-D or I-E should again be given full consideration, together with any evidence of changed status which may have occurred since classification.

4. It is clearly the duty and responsibility of the local board to determine the classification of each registrant. The intelligent selection or deferment of registrants, as the national interest may require, is the fundamental purpose of the Selective Training and Service Act of 1940 and the Regulations prescribed thereunder.

5. In Paragraph 352 of the Regulations, it is provided that a registrant shall be placed in Class II-A if the registrant is found by the local board to be a *necessary* man in any industry, business employment, agricultural pursuit, governmental service, or any other service or endeavor or *in training or preparation therefor,* the maintenance of which is necessary to the national health, safety, or interest. Local boards shall give proper weight to this provision in dealing with the claims for occupational deferment of *necessary men* engaged *in training or preparation* for activities necessary to the national health, safety, or interest.

6. Students or other registrants undergoing instruction may be deferred in Class II-A by the local board where the activity for which the registrant is *in training or preparation* is one essential to the national health, safety, or interest, and the registrant is found to be a *necessary man.* The necessity of providing the required replacements for and additions to those men deemed by local boards as being engaged in essential activities should be considered by local boards in making their determination in individual cases. In determining whether or not a student is a *necessary man* within the provisions of Paragraph 351, the local board should give due consideration to such factors as the length of time which the student has been pursuing the course in question, his relative progress and standing in such course, and his relative chances for employment or placement in the activity for which he is preparing. This latter factor may be evidenced by contracts of employment or other reasonable assurance that the registrant will engage in an essential activity.

7. The period of deferment in Class II-A may not exceed 6 months but such deferment may be renewed from time to time if the local board finds that such continuance is justified under the Regulations.

8. In applying these broad provisions there must be no deviation from the clear statutory prohibition against group deferments. The local board has full authority and responsibility for deciding whether or not a registrant is a *necessary man* and whether he should be selected or deferred. It must consider all of the evidence submitted in connection with each individual case and must decide each case on its particular facts.

9. Among the students and other registrants now undergoing instructions will be some who on or about July 1, 1941, will have completed their course of instruction but who will then be *in training or preparation* for examinations held under public authority for persons desiring to be licensed in various professional and technical fields. To avoid great hardship to the registrant and in keeping with the national interest, local boards in their discretion may defer such a registrant in Class II-A for a relatively short period pending such examination.

WILLIAM MATHER LEWIS,
Selective Service Director for
Pennsylvania.

Mar. 11, 1941.

CONTRIBUTIONS TO MEDICAL BENEVOLENCE FUND

The Committee on Medical Benevolence makes grateful acknowledgment of contributions to the Medical Benevolence Fund from the woman's auxiliary to the following county medical society:

Woman's Auxiliary, Lycoming County Medical Society	$250.00
Total contributions since 1940 report	$848.85

GRACIOUS AND GENEROUS

The Bucks County Medical Society held a business meeting on Wednesday, Mar. 12, at the Fountain House in Doylestown, Pa. . . .

The matter of remittance of dues to the members of our society who have been called to military and naval service came up for discussion. After broad and interesting discussion of the matter, a motion was made by Dr. Bernard A. Balsis and seconded by Dr. Walter J. Hendricks that for the current year of 1941 all dues be remitted to those entering the service and that the county society assume full obligation for the payment of the state assessment. This is to apply for the year 1941 only, the situation to be reopened and discussed as necessary in future years. . . .

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to Feb. 28:

New (55) and Reinstated (5) Members

Allegheny County (Pittsburgh)

Harold T. Brown
Oliver R. Bensy
Michael A. Cambest, Jr.
George D. Patton
John C. Shaver
Roy B. Sullivan
Joseph D. Sarandria, McKees Rocks

Armstrong County

William J. Ralston, Jr.	McKeesport

Berks County

Andrew J. Brennan	Birdsboro
John Edward Barsby	Reading
Peter J. Nowotarski	“

Bucks County

Dino E. P. McCurdy	Newtown

Butler County

David M. Fitzsimmons	Zelienople

Centre County

Stephen A. Forbes	State College
Frank M. Henninger	Millheim

Cumberland County

Jacob K. Levan	Carlisle

Dauphin County

John H. Waterman	Harrisburg

Delaware County

William B. Gibson	Lansdowne

(R) William H. Goodman, Chester.

Fayette County

William M. Markley	McClellandtown

Franklin County

Joseph E. Ferkany	South Mountain
Frank A. Pantalone	“

Lackawanna County

(R) John B. Jordan, Jr., Scranton.

Lancaster County

Ralph H. Goldin	Brownstown

Mifflin County

John A. Calhoun, Jr.	Swarthmore

Monroe County

(R) Oren B. Richards, Moosic.

Montgomery County

Jacob W. Savacool	Jenkintown

Northampton County

Lawrence H. Bloom	Easton

Northumberland County

Frederick H. Kramer	Selinsgrove

Philadelphia County (Philadelphia)

Morris Wolf Brody
Joseph Valentine F. Clay, Jr.
John Frank Coppolino
Bernard M. Gilbert
Harry A. Goldfine
Leopold Goldstein
Charles Colman Koniver
John W. Lentz
Raphael A. Levin
Henry A. Miller
Gilbert M. Palen
Irwin Jack Pincus
Harry Harvey Pote
Eugene L. Sielke
Felix Peter Sugint
Arthur Harold Thomas
James Anthony Thomas
Thomas Francis Furlong, Jr., Ardmore

Tioga County

Howard R. Buckley	Liberty

Venango County

Clinton A. Hays	Oil City

Washington County

Charles F. Elterich	Washington
Grant E. Hess, Jr.	“
Harry S. Hutchison	Claysville
Joseph H. Klimowski	California
William A. Prideaux, Jr.	Claysville

Westmoreland County

John R. A. Liska	Greensburg
Francis N. Mangold	Scottdale
Homer R. Mather, Jr.	Latrobe
Leslie S. Pierce	Greensburg

(R) John D. Caldwell, Irwin; Nathan A. Kopelman, New Kensington.

Removals (4), Transfers (4), Resignations (2), Deaths (14)

Berks County: *Death*—Lawrence H. Fitzgerald, Temple (Univ. Pa. '17), recently, aged 45.

Butler County: *Transfer*—Cletus B. Walker, Duke Center, to McKean County Society.

Cambria County: *Removal*—Albert L. Keim from Fredericktown to Tarentum. *Transfer*—Edward B. Webb, Bellwood, to Blair County Society.

Clearfield County: *Removal*—Francis E. Goodman from Westover to Altoona.

Cumberland County: *Death*—Lloyd A. Heikes, Lemoyne (Med.-Chi. Coll., Phila., '10), Feb. 4, aged 58.

DELAWARE COUNTY: *Death*—James E. Roberts, Lansdowne (Univ. Pa. '99), Jan. 4, aged 64.

LACKAWANNA COUNTY: *Death*—Albert E. Hager, Taylor (Jeff. Med. Coll. '95), Feb. 15, aged 71.

LEHIGH COUNTY: *Transfer*—Thomas R. Fister, Fredericksburg, to Lebanon County Society. *Deaths*—Milton E. Hartman, Allentown (Jeff. Med. Coll. '02), Nov. 27, aged 63; Harry E. Klingaman, Emmaus (Med.-Chi. Coll., Phila., '11), Sept. 18, aged 56.

MONROE COUNTY: *Removal*—Hugh L. Bowman from Stroudsburg to Albany, N. Y.

NORTHAMPTON COUNTY: *Resignation*—Michael S. Dudich, East Bangor.

PHILADELPHIA COUNTY: *Removal*—Charles P. Bailey from Philadelphia to Wilmington, Del. *Transfer*—William H. Erb, Ridley Park, to Delaware County Society. *Deaths*—Samuel A. Bonnaffon, Wilmington, Del. (Univ. Pa. '88), Dec. 28, aged 74; Nelson J. Burden, Philadelphia (Univ. Pa. '25), Jan. 31, aged 39; Sherman F. Gilpin, Philadelphia (Jeff. Med. Coll. '96), Feb. 19, aged 70; Isadore Katz, Philadelphia (Temple Univ. '29), Feb. 20, aged 35; Benjamin P. Seltzer, Philadelphia (Univ. Pa. '24), Feb. 16, aged 42; Maurice S. Shuman, Philadelphia (Hahn. Med. Coll. '38), Feb. 12, aged 30; Ross H. Thompson, Philadelphia (Med.-Chi. Coll., Phila., '11), Feb. 11, aged 55.

WARREN COUNTY: *Death*—Hiram B. Russell, Sheffield (West. Res. Med. Coll. '90), Feb. 19, aged 74.

YORK COUNTY: *Resignation*—Clayton E. Bortner, Hanover.

Net gain in membership during February ... 44

PAYMENT OF PER-CAPITA ASSESSMENT

The following payment of per-capita assessment has been received since Jan. 29. Figures in first column indicate county society numbers; second column, State Society numbers:

Feb. 1	Blair	1–60	1288–1347	$600.00
	Lancaster	1–91	1348–1438	910.00
	Clearfield	1–16	1439–1454	160.00
	Montgomery	171–182	1455–1466	120.00
	Northumberland	12–18	1467–1473	70.00
	Northumberland	19*		
	Allegheny	4, 247–333, 335–354, 356–392, 394–407, 409–850	1474–2074	6,010.00
3	Tioga	1–6	2075–2080	60.00
	Potter	1–6	2081–2086	60.00
	Elk	8–13	2087–2092	60.00
	Philadelphia	62–1214	2093–3245	11,530.00
	Philadelphia	2452 (1940)	9196	10.00
5	Erie	68–78	3246–3256	110.00
	Indiana	10–22	3257–3269	130.00
	Lancaster	92–109	3270–3287	180.00
	Lackawanna	1–44	3288–3331	440.00
6	Carbon	15–23	3332–3340	90.00
7	Montour	1–20	3341–3360	200.00
	Delaware	112–137	3361–3386	260.00
	Delaware	138*		
Feb. 7	Potter	7	3387	$10.00
	Indiana	23–25	3388–3390	30.00
	Clarion	1–15	3391–3405	150.00
10	Dauphin	7–142	3406–3541	1,360.00
	Berks	99–146	3542–3589	480.00
	Columbia	30–37	3590–3597	80.00
	Fayette	3–52	3598–3647	500.00
	Lawrence	3–41	3648–3686	390.00
	Somerset	25–28	3687–3690	40.00
	Indiana	26–27	3691–3692	20.00
	Potter	8	3693	10.00
	Montgomery	251 (1940)	9197	10.00
	Montgomery	183–189, 191–196	3694–3706	130.00
	Montgomery	190*		
12	York	101–110	3707–3716	100.00
	Washington	1–46	3717–3762	460.00
13	Clarion	16–21	3763–3768	60.00
14	Butler	1–35	3769–3803	350.00
	Washington	47–55	3804–3812	90.00
	Wyoming	4	3813	10.00
	Lancaster	110–130	3814–3834	210.00
	Mifflin	1–18	3835–3852	180.00
17	Westmoreland	2, 4–52, 151–200	3853–3952	1,000.00
	Westmoreland	185 (1940)	9198	10.00
	Lackawanna	45–88	3953–3996	440.00
	Lackawanna	267 (1940)	9199	10.00
	Indiana	28–33	3997–4002	60.00
	Montgomery	197–201	4003–4007	50.00
	Elk	16–17	4008–4009	20.00
	Elk	14–15*		
	Potter	9–10	4010–4011	20.00
	Delaware	139–168	4012–4041	300.00
	Delaware	169*		
	Luzerne	65–106	4042–4083	420.00
	Centre	16–24	4084–4092	90.00
19	Bucks	4–23	4093–4112	200.00
	Indiana	34–37	4113–4116	40.00
	Erie	79–92	4117–4130	140.00
20	Washington	57–58	4131–4132	20.00
	Franklin	40–54	4133–4147	150.00
	Bucks	24–50	4148–4174	270.00
	Northumberland	20–32	4175–4187	130.00
21	Centre	25	4188	10.00
	Tioga	7–11	4189–4193	50.00
	Cambria	7–74	4194–4261	680.00
22	Centre	26	4262	10.00
	Venango	1–8	4263–4270	80.00
24	Bradford	10–21	4271–4282	120.00
	Clinton	1, 3–14	4283–4295	130.00
	Wayne-Pike	12–18	4296–4302	70.00
25	Blair	61–77	4303–4319	170.00
	Venango	9–15	4320–4326	70.00
	Delaware	170–190	4327–4347	210.00
	Montgomery	202–206	4348–4352	50.00
	Lancaster	131–140	4353–4362	100.00
	Greene	4–20	4363–4379	170.00
	Indiana	38–40	4380–4382	30.00
26	Luzerne	107–165	4383–4441	590.00
	Monroe	1–25	4442–4466	250.00
	Armstrong	29–38	4467–4476	100.00
	Bucks	52–55	4477–4480	40.00
	Washington	56, 59–68	4481–4491	110.00
27	Berks	147–164	4492–4509	180.00
	Northampton	2–3, 5–104	4510–4611	1,020.00
	Allegheny	851–874, 876–987	4612–4741	1,300.00

(6 exempt on account of military service)

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* Exempt account of military service.

LIBRARY NEWS

Members desiring to borrow reprints from the library should send 25 cents in stamps to cover the postage and part of the expense of collecting the material. Address the Librarian, 230 State Street, Harrisburg, Pa. Each package may be kept for a period of 14 days.

Borrowers between Feb. 1 and Mar. 1 were:

Abe Hurwitz, Harrisburg—*Etiology of Cancer* (6 articles).

Samuel A. Rulon, Jr., Phoenixville—*Therapy of Myopia* (5 articles).

Kenneth W. Watterson, Meadville—*Socialized Medicine* (20 articles).

Oscar J. Hurok, Galeton—*Therapy of Hemorrhoids* (14 articles).

Douglas A. Decker, Allentown—*Venereal Diseases* (24 articles).

James R. McNabb, Burnham—*Chorea* (14 articles).

Samuel Steinberg, Philadelphia—*Therapy of Hernia* (18 articles).

Dale C. Stahle, Harrisburg—*Therapy of Pneumonia* (20 articles).

William C. Schultz, Jr., Waynesboro—*Lead Poisoning* (22 articles).

Rife Gingrich, Middletown—*Socialized Medicine* (18 articles).

Anna de Planter Bowes, Harrisburg—*Diseases of the Biliary Tract* (2 articles).

Mrs. Augustus S. Kech, Altoona—*Industry and Occupations* (51 articles).

Thomas R. Hepler, Harrisburg—*Therapy of Septicemia* (23 articles).

Earl C. Romesberg, York—*History of Syphilis* (15 articles).

Frederick I. Battaglia, McKeesport—*Influenzal Meningitis* (13 articles).

Lemuel D. Peebles, Jr., New Kensington—*Edema of the Scrotum* (8 articles).

Charles R. Brandt, Mechanicsburg—*Trigeminal Neuralgia* (18 articles).

Charles B. Reitz, Allentown—*State Medicine* (19 articles).

Sidney L. Feldstein, Harrisburg—*Diagnosis of Pulmonary Tuberculosis* (1 article).

Herman L. Rudolph, Reading—*Inflammation of the Bursa* (12 articles).

Alfred F. Doyle, Harrisburg—*Economic and Social Aspects of Syphilis* (7 articles); *Medicine and Surgery in Industry and Occupations* (17 articles).

Alfred E. Chadwick, New Brighton—*High Blood Pressure* (24 articles).

John V. Foster, Harrisburg—*Tumors of the Bone* (13 articles).

C. Smith Manufacturing Company, Dayton, Ohio—*Cellulitis* (1 article).

John V. McAninch, McDonald—*Spermatozoa* (20 articles).

William D. Schrack, Jr., Harrisburg—*Diagnosis of Undulant Fever* (6 articles).

Mrs. Walter J. Connor, Harrisburg—*Group Practice in Medicine* (4 articles).

W. H. Schaub, Harrisburg—*Pulmonary Tuberculosis Roentgenography* (1 article).

Myer W. Rubenstein, Pittsburgh—*Lupus Erythematosus* (16 articles); *Sulfanilamide and Sulfanilamide Derivatives* (23 articles).

Mrs. Clarence E. Moore, Harrisburg—1 journal.

C. L. McMillen, Baden—*Osteo-arthritis and Rheumatoid Arthritis* (18 articles); *Blood Sedimentation* (20 articles).

Warren C. Phillips, Harrisburg—*Medical Economics* (7 articles).

James H. Booser, Harrisburg—*Diseases of the Respiratory Tract* (30 articles).

Lewis G. Crawford, Harrisburg—*Marriage* (12 articles).

Elliott B. Edie, Uniontown—*Sedatives* (33 articles).

Mrs. David E. Hoff, Harrisburg—*Medical Legislation* (1 article).

S. E. Sanderson, Binghamton, N. Y.—*Diverticula of the Duodenum* (10 articles).

John D. Yeagley, York—*Typhoid Carriers* (14 articles).

Mathew H. Sherman, Harrisburg—*Marriage* (29 articles).

Sister M. Ethel, Pittsburgh—*Hydrothorax* (1 article).

R. Stanley Bank, Harrisburg—*High Blood Pressure* (34 articles).

Reba Madge, Sharon—*State Medicine* (7 articles).

Duane George Sonneborn, Philadelphia—*Thromboangiitis Obliterans* (37 articles).

J. Stratton Carpenter, Pottsville—*Platybasia* (2 articles).

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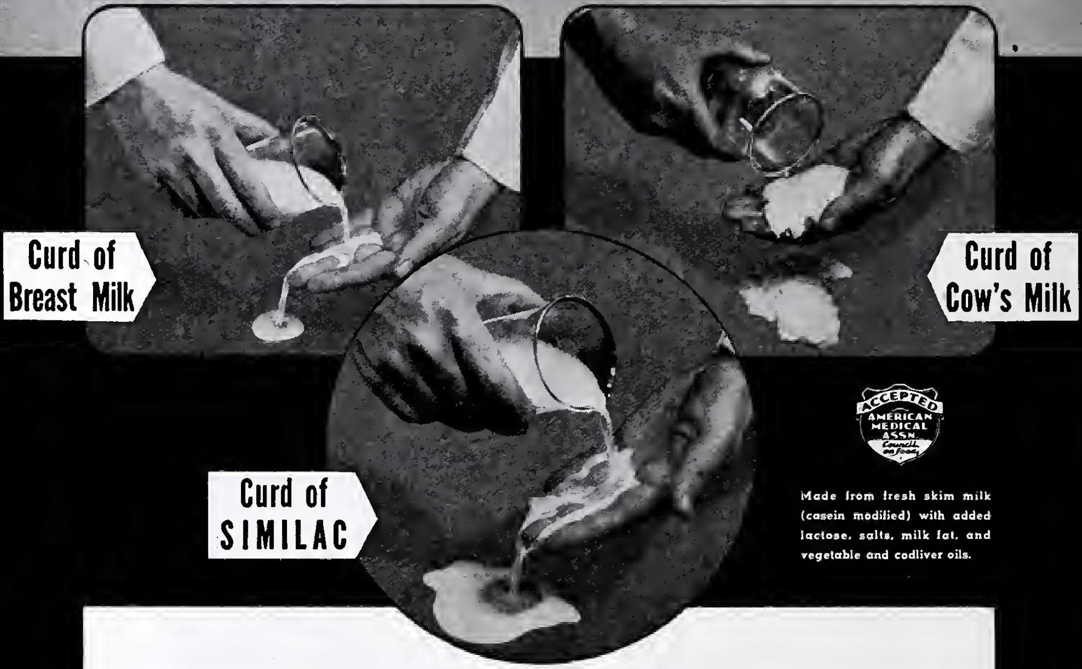

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COUNTY SOCIETY REPORTS

BEAVER

Feb. 13, 1941

The regular monthly meeting was held at the Court House, Beaver, at 3: 30 p. m. The scientific program consisted of a paper read by Edward H. Douds on "Some Pitfalls in the Differential Diagnosis of Pulmonary and Abdominal Diseases," discussion of which was opened by James G. Weyand.

At the business session, special announcement was made of the 1941 Tenth Councilor District meeting which will be held on Apr. 17 at the Brodhead Hotel, Beaver Falls. There will be morning and afternoon scientific sessions high-lighted by a Symposium on Gastro-intestinal Diseases by George P. Muller and associates from Jefferson Medical College, Philadelphia. The woman's auxiliaries of the Tenth District will also hold meetings the same day and will join the physicians at a banquet and entertainment in the evening.

John H. Gemmell, *Reporter.*

CHESTER

Jan. 21, 1941

At the regular meeting held at Chester County Hospital, Harry T. Smith was unanimously chosen president-elect.

Robert T. Devereux spoke of the society's heritage in civic, general, and medical affairs and of the importance of the members' integrity, tolerance toward others, and their maintenance of the high principles of ethics at this critical time.

Frank B. Robinson, of Oxford, the retiring president, reviewed the activities of the past year expressing gratitude for co-operation and accomplishments. He thanked the individual members.

A summary of the Executive Committee report follows:

There are still 16 members of the society who have failed to answer the Preparedness Questionnaire. Every effort is being made to obtain replies from these men.

Red Cross Disaster Preparedness and Relief Committees have been organized throughout Chester County. Only 2 of these committees do not have medical representation. The functions of these committees in time of disaster were outlined.

It was agreed that the whole program of tuberculin testing and roentgen-raying of school children be reviewed by the Tuberculosis Subcommittee and discussed at the next meeting of the Public Health Commission.

The society approved of a resolution of the State Medical Society intended to improve laboratory standards, namely, that a committee of three, one to be a pathologist, be appointed:

1. To correct uses and abuses of facilities offered by "free" tax-supported laboratories.
2. To revise serologic fees where indicated.
3. To encourage development of competent laboratories.

A communication from the chairman of the State Healing Arts Advisory Committee was read. It was approved by the society except for Section 3, which proposed the employment of a medical social service worker whose function would be to limit the amount of professional service rendered chronic cases on relief.

Drs. Vincent, Bruton, and Bradford of Coatesville, Downingtown, and Oxford respectively were admitted to the society.

The secretary and treasurer gave their annual reports. The meeting was then adjourned.

Feb. 18, 1941

The scientific part of the meeting was presented by Kenneth S. Scott, superintendent of the Oakbourne State Epileptic Colony Farm. It was a discussion of some of the recent aspects of epilepsy.

Epilepsy, like insanity, is still viewed by the public with superstitious awe. This creates a great problem of social and economic adjustment. There are one-half a million epileptics in the United States alone. Of these there are 40,000 in institutions at an annual cost of 18 million dollars.

The etiology of epilepsy is varied, is difficult to determine, and is known in only one-half of the cases. The most common causes are trauma and concussion, congenital defect, birth injuries, meningo-encephalitis, meningitis, and acquired syphilis.

The auras which frequently precede a convulsive seizure are vague complaints of auditory or visual hallucinations, vertigo, or a feeling of movement. The physician too often considers these as some form of psychoneurosis when they are actually indicative of subcortical or cortical electrical activity.

All epileptics are entitled to an encephalographic study. One of the secrets to the success of this is to inject 3 to 4 times as much air as there is fluid withdrawn. By this method of study, cortical atrophy, hydrocephalus, or hemiatrophy is often found.

Blood chemical studies have offered very little for the epileptic. The blood sugar levels are inconstant. It is known that the administration of dextrose will reduce petit mal activities and that fasting has no demonstrable effect on the seizures. But no hypoglycemic factor has been found. The acid-base balance was extensively studied when it was discovered that the electrical wave activity of epileptics was completely abated upon breathing carbon dioxide, yet petit mal attacks are more common during alkalosis. Epileptics have a failure of homeostasis, i. e., there is no fixed level in blood sugar or *p*H.

The mineral and chlorine ion elements are normal, and the blood cholesterol shows great variability. The most constant finding in epileptics is the inconstancy of the physiologic findings.

Electro-encephalography has recently proved a great aid in the study of epileptics because of its specificity for each individual under normal conditions as well as during a convulsive seizure. It is a graphic electrical recording made possible by the low potential oscillograph. It records the electrical activity in the brain when its cells release electrical discharges to the muscles. A potential of 5 to 100 microvolts is used and the waves vary from 3 to 60 per second. During a grand mal seizure the waves are of high amplitude and very rapid (about 30 per second). Petit mal is characterized by slower waves with alternate spiked and rounded waves. Psychomotor disturbances show regular, deep, spiked waves separated by a rapid fluttering of small amplitude. A normal recording approaches a sinus wave with a slow rate. Delta waves, present in narcosis, normal sleep, and brain tumor, are a summation of electrical discharges with high waves of slow rate. The interpretation of these readings is difficult and requires experience, but they offer a better control than any other procedure of epileptic treatment.

In the treatment of epilepsy the first duty of the physician is to adjust the patient to his environment in a psychic, social, and economic way. The bromides are little used today. Phenobarbital is used in the treatment of grand mal seizures, but it is important to give it in large enough dosage (6 to 7½ grains daily). It should not be used in petit mal since it frequently increases the number of seizures.

Stimulating drugs are of little value. The ketogenic diet has shown good results in 31 per cent of the epileptic children at the Mayo Clinic. Dehydration is still controversial. Brilliant vital red, methylene blue, and rabies vaccine have been used spasmodically with doubtful benefit.

The present outstanding drug for the control of epileptic seizures is dilantin sodium. It is more effective than anything else previously used. It is particularly good in psychomotor disturbances, least so in petit mal. When using it, one should be alert for its toxic effects such as vertigo, gastric and psychic disturbances, hypertrophic gingivitis, and exfoliative dermatitis. When making a transfer from phenobarbital to dilantin sodium, it should be done slowly to prevent the onset of status epilepticus.

Dr. Scott concluded his talk by emphasizing the magnitude of the problem of epilepsy and the importance of diffusion of the present knowledge on the subject.

The discussion was opened by James S. Dean, superintendent of Pennhurst, who defined an epileptic seizure as a paroxysmal disturbance of consciousness with or without loss of motor function. He urged that every effort be made to determine the etiology rather than be satisfied with the diagnosis of "idiopathic epilepsy." At the Neurological Institute in New York a great many encephalograms are made which show cortical atrophy or some developmental failure. These are primarily there and act only as a predisposing cause. A precipitating cause is also necessary for an epileptic attack. He pointed out that the cortex has an inhibitory function and normally permits only certain impulses to be released to initiate and perform muscle function. When this cortex does not function properly, many impulses get through and the muscles fail to function in an orderly fashion.

He considers the chief weapon or fundamental cause of a convulsion to be anoxemia, whether it be due to edema, inflammation, or tumor. There is a surgical treatment for epilepsy when a tumor is present or when scars are present, but one should remember that cutting away one scar is sure to leave another.

Dr. Dean pointed out the frequent cessation of seizures after encephalography, and attributed this to alteration of the brain circulation.

Louis S. Bringhurst, *Reporter.*

CRAWFORD

Jan. 22, 1941

The regular meeting of the society was held at the Kepler Hotel, Meadville, with dinner at 6:30 p.m. Herman H. Walker, of Linesville, reported on a meeting held in Harrisburg during December, 1940, which was devoted to discussion of the various problems that have arisen under the Public Assistance medical program.

The principal speaker of the evening was Arthur G. Davis, of Erie. He dealt with the treatment of compound fractures, bringing out the fact that successful treatment is the result of many years' experience in which all the various branches of medicine have contributed some important link to the chain. Bacteriology taught us something about the types of bacteria and their reaction in the tissue. Bone surgery perfected the technic so that hairline reductions might be attained with nonelectrolytic metals for fixation. General surgery contributed the perfect operating room procedures and the methods for controlling shock and blood loss through knowledge of water and salt balance and blood transfusion. Anesthesia made popular such agents as avertin and evipan, so that the use of inhalation anesthesia was reduced to a minimum. Pathology taught us the necessity for limiting edema and cell death and the relation of pressure dressings for the best end results. Chemistry demonstrated the value of solutions that were nonirritating and that most bactericidal solutions are destructive and act as protein coagulants.

Dr. Davis spoke of the time element as being most important. This is predetermined by bacteria action. His figures were interesting and startling. Starting with one bacterium in an hour, we would have 64 bacteria in 3 hours, 64,000 in 8 hours, and 1,000,000,000 in 15 hours, the rate of division being one division every 30 minutes. For this reason the skin "scrub up" is most important. No chemical disinfectant is advised.

Débridement must be complete. Bleeding tissue is the index of living tissue. Puncture drainage is employed. If there are skin defects, use full thickness grafts or split grafts. Use no tension sutures. If there is a fracture, metallic fixation is not contraindicated. It tends to obtain hairline reduction and eliminates dead space. Pressure dressings are most important. Gauze fluffs are heaped on the area. An elastic bandage is then applied from the toes or fingers up over the involved area. This tends to eliminate all dead space, and to lessen the edema and exudate. In this manner tissue death is avoided. Conditions such as shock, hemorrhage, and infection were discussed, also the uses of sulfanilamide.

Dr. Davis stressed the importance of what he called "nuisance surgery," describing those cases that occur at hours inconvenient to the surgeon. They are as much an emergency as an acute appendix. These should not be neglected or relegated to an intern or house physician. Experience shows that when these cases are taken care of immediately, the surgeon will likely save himself hours of follow-up service through an untold number of subsequent dressings.

Dr. Davis concluded a most instructive evening by showing a motion picture film depicting his method of reducing fractures of the spine.

Joseph R. Gingold, *Reporter.*

DAUPHIN

Jan. 7, 1941

At this meeting Howard K. Petry, presiding officer, discussed various phases of "Trends in Medical Practice."

Dr. Petry considers the past 50 years as extremely progressive in professional science. Aseptic surgery and surgical technic, the relationship between bacteria and disease, the development of pathologic, bacteriologic, and roentgenologic laboratories as diagnostic aids, and the conquest of acute infections are of incalculable importance.

Lister, Koch, Pasteur, Roentgen, Ehrlich, Behring, Curie, Wassermann, Reed and Carroll, Gorgas, and Banting were mentioned for their brilliant investigations. It is through their untiring efforts that many outstanding developments of the century have been made.

Dr. Petry pointed out that by 1931 man's life expectancy had been increased to 59.5 years—a gain of 10 years plus in a 30-year period. Some factors which have contributed to this are the decrease in the mortality rate from tuberculosis (now in fifth, rather than first, place) and control through immunization and public education of the communicable diseases of childhood—scarlet fever, diphtheria, whooping cough, and measles. Because of the difficulty in accurately differentiating between pneumonia and influenza as a cause of death, these are combined in mortality reports. Even in this instance, and before the introduction of the sulfonamides, the death rate current at the beginning of the century had been halved. Despite these profound changes, little has been done to lengthen the productive period or the maximum life probability. The medical problem changes from the acute infections of youth to the chronic disintegrative disturbances of age.

This necessitates consideration of the diseases which are actually or relatively increasing as causes of death. The leaders are probably coronary disease and angina pectoris. This rise must be considered together with the increased number of individuals in the sclerotic age period, and the assistance in diagnosis of the electrocardiograph. Cancer shows a steady increase in spite of surgical advances and earlier diagnoses.

However, the renal-disturbance picture is more encouraging, because of less renal damage due to acute infections, and because of improved diagnosis and treatment. Similarly, mortality caused by cerebral hemorrhage and paralysis has decreased. Again, assistance from the electrocardiograph, together with postmortem revelation, must receive credit. With superior diagnostic accuracy, laboratory aid, and insulin control, we should find decreased mortality in diabetes. This is not the case, however; we have only deferred diabetic deaths. The machine age, demanding less physical work, but with higher standards of living and diet, with consequent increase in weight, has resulted in an increase of diabetic deaths, also pancreatic deficiency.

Dr. Petry mentioned the importance of his specialty—psychiatry. Mental disease is increasing, but most forms are decreasing, relatively. It is in the old-age psychoses, senile and arteriosclerotic in origin, that the major relative increase is occurring. This further emphasizes the fact that real progress has been made

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph. Gon. & Ven. Dis., 23, 201 (March) 1939.

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against acute infections, but that the field of the chronic disorders has hardly been scratched.

While Dr. Petry is not biased toward the theory of socialized medicine, nor has he accepted it, he feels that society will have to make further provision for low-cost care of patients with long-drawn-out late-chronic conditions, such as cardiovascular-renal disorders, cancer, and diabetes. He believes sincerely in the free and independent practice of medicine. The greatest certainty of its continuation lies in our ability to anticipate future trends and needs.

Dr. Petry envisions future studies in cellular metabolism and physiology, believing that these may eventually give us the key to the closed door of local tissue and organ degeneration. Then, by our discoveries and their application, we shall finally give to man not only life but health and efficiency. Our aim for the future must be so to understand and direct human life that it may be lived in health and comfort to the day of dissolution.

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Feb. 4, 1941

The regular monthly meeting was presided over by its recently elected president, Howard K. Petry. Harrison F. Flippin, of Philadelphia, spoke on "Sulfanilamide and Sulfapyridine in the Treatment of Pneumonia."

The most important part of Dr. Flippin's paper concerned a new sulfonamide compound, sulfadiazine, which has been in use at the Philadelphia General Hospital. At this time it appears that sulfadiazine is equally as effective as sulfathiazole and sulfapyridine in the treatment of pneumococcic pneumonia. Second, it tends to bring the temperature down somewhat more rapidly than does sulfathiazole and, third, it causes less vomiting and produces fewer red cells in the urine. Furthermore, because this drug is excreted quite slowly by the kidneys, it seems highly probable that we will be able to treat patients with a smaller dosage of the drug. Also, because of its lower degree of acetylation, there are fewer crystals of the drug in the urine of patients receiving sulfadiazine than in those receiving comparable amounts of sulfathiazole. This is also probably a result of the difference in solubility of acetylsulfathiazole and acetylsulfadiazine in urine, as the latter is more soluble. It is Dr. Flippin's feeling at the present time that sulfadiazine will probably replace sulfathiazole in the treatment of pneumococcic pneumonia.

William Tyler Douglass, Jr., *Reporter.*

DELAWARE

Feb. 13, 1941

The regular monthly meeting of the society was held at the Chester Hospital at 9 p. m. This was the first meeting at which the newly elected president, Franklin E. Chamberlin, presided.

At the business meeting, William Blake Gibson, of Lansdowne, and William H. Goodman, of Chester, were elected to membership.

The annual report of the Eastern Branch of the Delaware County Medical Society was read and approved.

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PLASTIC REPARATIVE SURGERY

The course comprises examination of patients; tests, models and photographs; diagnosis and selection of method of correction; the properties of various orders of skin grafts and variance in their application; bone, cartilage and nerve grafts; readjustments and replacements; fresh wound treatment; pre-operative care; anesthesia; operative procedures; wound closing and minimum scar; follow-up and infection problems; keloids. The course covers the field of correction of disfigurements and replacement of traumatic loss and congenital deficiency. Exposition of cases, lectures and cadaver demonstrations.

For Information Address: MEDICAL EXECUTIVE OFFICER, 345 West 50th Street, New York City

A report of each of the following committees by its respective chairman was made: Health Legislation, Public Assistance, Medical Economics, and Tuberculosis.

E. Wayne Egbert, secretary and treasurer, has been granted a leave of absence for military service. Augustus H. Clagett has offered to assume the office of secretary-treasurer pro tem during Dr. Egbert's absence.

The scientific meeting was presided over by Dr. Chamberlin, who introduced the speaker of the evening, Edward L. Bortz, president of the Philadelphia County Medical Society and chairman of the Commission for the Study of Pneumonia Control of The Medical Society of the State of Pennsylvania. His subject was "Important Developments in Pneumonia Control."

In part, Dr. Bortz said that progress in pneumonia control has been amazing. Modern medical science, in comparatively recent years, has made great strides. Effective serotherapy is only 15 years old and chemotherapeutics is less than 5 years old.

Pennsylvania has 35,000 to 40,000 cases of pneumonia annually. The mortality rates previous to specific serotherapy and chemotherapeutics were 25 to 32 per cent. Last year the pneumonia mortality rate in this state was very low. A low mortality rate depends on one or all of 3 factors: (1) the physician, (2) the patient, and (3) the treatment. The first position of the organized medical profession in pneumonia control is the education of the physician. The campaign of pneumonia control throughout the nation is led by Pennsylvania. The physicians of Pennsylvania are alert to the possibilities of reduction in the number of deaths from pneumonia. Dr. Bortz urgently appealed to physicians to report all their pneumonia cases in detail to the State Department of Health, Division of Pneumonia Control.

For the laity the State Health Department conducts a campaign of education on pneumonia control planned by Mrs. Edna Kech, of Altoona. Lay education in pneumonia has been a big factor in Pennsylvania's present fine position in the control of this disease.

Dr. Bortz paid tribute to the work of John J. Shaw as head of the Pennsylvania Department of Health. He said Dr. Shaw is most ambitious to help the physicians in every possible way.

An interesting discussion by several members of the society followed Dr. Bortz's talk.

Ruth E. Duffy, *Reporter.*

ERIE

Feb. 4, 1941

Edward J. McCague, of Pittsburgh, presented a paper on "Injuries to Urethra and Bladder," an abstract of which follows:

Traumatic injuries of the genito-urinary tract are not numerous; they are, however, a very grave and serious emergency and, if not promptly recognized and adequately dealt with, are attended with an appalling mortality.

Traumatic injuries of the urethra and bladder which occur as a complication of fracture of the bony pelvis and the straddle injuries that result from other forms of trauma provide a timely subject. With the mills, mines, and factories operating at peak capacity, the incidence will increase and the industrial and general surgeon will be confronted with the management of this type of injury in greater numbers.

In the past 34 years there have been admitted to the surgical service of Mercy Hospital (Pittsburgh) 729 patients with fractures of the pelvis. In this group the following complications occurred: 120 or 16.4 per cent had combined injuries; 93 or 12.7 per cent had intrapelvic rupture of the urethra; 16 or 2.19 per cent had rupture of the bladder, of which 0.82 per cent were intraperitoneal and 13.7 per cent were extraperitoneal; and 11 or 1.5 per cent had combined rupture of the urethra and bladder with grave associated intraperitoneal and visceral damage. The intrapelvic rupture of the urethra was by far the most frequent complication.

It has been a common observation in the group with the intrapelvic ruptures that, unless there is an associated rupture of the bladder, these patients do not extravasate early, due to reflex spasm of the sphincter that Wheeler has so aptly described: "This beneficent and enduring spasm is nature's first-aid to the injured; but for it, the mortality from early extravasation of urine and infection would be increased."

In the intrapelvic group there is extreme pain on movement, inability to move the legs which are rotated outward, the bladder is usually distended, the patient is unable to void, blood may be seen trickling from the meatus, examination of the pelvis by palpation of the iliac crests or rectal examination will generally reveal deformity, and crepitus is elicited by compression. There may be perineal or scrotal hematomas. The diagnosis is made by the history of injury and the presence of the foregoing symptoms. Some of these cases may have a grave injury accompanied by remarkably little shock. The major cause of death of those in the intrapelvic group who survive the primary shock is urinary extravasation and infection.

It is our practice to operate on these patients as soon as they have recovered from their primary shock; if necessary, local anesthesia or sodium pentothal may be employed. The patient with severe injury and profound shock should not be subjected to a lengthy surgical procedure. In such a patient the surgeon should drain the bladder and insure adequate drainage of the prevesical spaces. Procedures necessary for the preservation of the continuity of the urethra may be done later when the condition of the patient is more favorable.

In the cases in good condition, not badly shocked, the combined perineal and suprapubic operation with retrograde catheterization may be employed. The urethral catheter extends from the urethral meatus to the suprapubic opening and is not used for drainage but serves as a splint for restoration of the urethra. No effort at suture or anastomosis of the torn ends of the urethra is attempted. In no instance was there failure of union of the divided ends of the urethra; splinting of the

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urethra over a catheter with the legs in extension was sufficient.

Drainage of the bladder with a large tube or de Pezzer catheter and thorough drainage of the prevesical spaces are extremely important.

The mortality in the combined groups was 39.1 per cent. The mortality in the patients with the intrapelvic ruptures was 32 per cent. Stricture of the urethra at the site of injury may occur, so these patients are dilated at intervals of 15 days to a month for a few months following injury.

There were 20 straddle injuries in this group with one death. This type of injury will vary from the most trivial, that will require little or no treatment, to the severe types with partial or complete ruptures, perineal or scrotal hematomas, and later extravasation.

Patients with fractures of the pelvis complicated by rupture of the urethra or bladder are potential stone-formers. The writer has reported 10 cases of stone formation in the fracture and traumatic group. In 4 cases the calculosis was so great and the renal damage so marked as to necessitate nephrectomy. In this fracture group there is nearly always a marked increase in the excretion of urinary calcium, and unless the factors of stasis and infection (usually with a urea-splitting organism) are prevented, the precipitation of the alkaline phosphates and carbonates with stone formation will occur.

An attempt is made to keep the hydrogen ion concentration at a level where the precipitation of calcium phosphates and carbonates does not occur. This is accomplished with a high acid ash diet, and is sufficient in the majority of cases to maintain the *p*H at a level of 5 to 5.5. Acidifying medication such as ammonium chloride, 15 grains in an enteric-coated tablet, may be given 4 times a day if necessary; also 2 to 3 liters of water daily.

Conclusions: Traumatic rupture of the urethra and urinary bladder as a complication of fracture of the bony pelvis is a surgical emergency of extreme gravity. About 23.3 per cent of these patients do not survive the primary shock. The cause of death in the remaining group is urinary extravasation and sepsis.

Delmar R. Palmer, *Reporter.*

LEHIGH

Jan. 14, 1941

The regular annual meeting was held at 3 p. m. at the Americus Hotel, Allentown, with President Frederick G. Klotz presiding. It consisted of a business meeting. Each committee chairman submitted his report, with recommendations, on which the society took action if necessary and accepted. New officers were elected for the year as follows: Henry E. Guth, president-elect; David H. Parmet, first vice-president; Joseph A. Lieberman, Jr., second vice-president; J. Frederic Dreyer, secretary; William J. Hertz, treasurer; Myrtle M. Siegfried, librarian; Anna M. Ziegler, reporter; Carl J. Newhart, censor for 3 years. President Klotz turned the gavel and chair over to the incoming president, Paul C. Shoemaker. The annual dinner and dance were held at the same place in the evening.

Feb. 11, 1941

The regular meeting was held at 8:30 p. m. at the Traylor Hotel, Allentown.

Dr. Backenstoe, chairman of the Defense Committee, recommended that each physician (1) sponsor a blood-typing campaign of his patients and give each patient a colored card typifying his type of blood; (2) give tetanus toxoid to patients; (3) give typhoid vaccine to patients; (4) recommend the adoption of cat pets (to control rodent-transmitted disease); (5) join a first-aid center and know his duties and site of activities and co-ordinate his activities with the state and national medical societies; (6) keep himself informed on foreign letters in the *Journal of the A. M. A.*, on air raid bulletins put out by London, on the symptoms and treatment of gas poisoning, and on the modern treatment of war wounds; (7) bolster public morale.

The president and chairman of the meeting, Paul C. Shoemaker, introduced the guest speaker, Wendell J. Stainsby, a member of the Commission for the Study of Pneumonia Control of The Medical Society of the State of Pennsylvania. His subject was "Practical Aspects in the Diagnosis and Treatment of Pneumonia." This was ably presented with the aid of lantern slides.

Anna M. Ziegler, *Reporter.*

LUZERNE

Feb. 5, 1941

The regular meeting of the society was held in the Medical Building, Wilkes-Barre. The essayists were Max Tischler, Wilkes-Barre, who spoke on the subject "Bleeding in the First Trimester of Pregnancy," and Stanley M. Stapinski, Glen Lyon, whose subject was "Results of Schick Test in 638 Children Given Injections of Diphtheria Toxoid."

The latter said, in part, that although the field of diphtheria has been the scene of brilliant and epoch-making discoveries, the physician today finds that a case of diphtheria is no longer a purely clinical and scientific problem, but also involves sociologic questions arising from administrative regulations.

A number of advances have been made which improve the means of determining the presence of diphtheria bacilli in the throats of sick or well persons, of isolating them, of determining their virulence and biologic type, and of immunizing susceptible persons.

The efficacy claimed for the alum-precipitated toxoid is ascribed to a continuous and prolonged stimulation of antibodies due to slow absorption of the antigen.

In the study made by Dr. Stapinski it was assumed that the toxoid is the most widely accepted agent in diphtheria immunization and that the Schick test is the only practical means of determining immunity.

At St. Stanilaus Orphanage 638 cases were analyzed. This study indicates that a higher percentage of negative reactions are obtained in children immunized between 6 and 9 months of age than at one year of age. This is probably influenced in part by passive immunity inherited from the mother. Children must be Schick-tested at a later age than 9 months if no toxoid is to be given to assure immunity. In private practice toxoid can safely be delayed to the ninth month of age permitting opportunity for whooping cough inoculations or smallpox vaccination. As regards time relationship between immunization and the Schick test reaction, it was found that the percentage of negative reactors is smaller when infants are Schick-tested one year after immunization, which shows that it is safe and wise to postpone the test until one year after administration of diphtheria toxoid.

Concerning the problem of the reversal from Schick-negative to positive, there is about 26 per cent reversal when children received only 2 injections of toxoid.

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Many had again become Schick-positive 2 years after immunization. This suggests the need of Schick-testing before entrance to school.

When 2 doses of toxoid were given, the percentage of Schick-negatives was 88, while with 3 doses it was 96 to 97 per cent. Under the 3-dose method, injections are given at monthly intervals.

In discussion, Francis T. O'Donnell corroborated the findings on the Schick test. He recently had attended a child with diphtheria who had received one injection of alum-precipitated toxoid, the mother having been told that the child was protected for life and that it was unnecessary to Schick-test him. The Committee on Immunizations recommends strongly the use of multiple injections.

Feb. 19, 1941

The regular meeting was held in the Medical Building, Wilkes-Barre, Joseph V. Connole presiding.

Clifford B. Lull, of Philadelphia, spoke on "Personal Experiences in Gynecology and Obstetrics." Among interesting cases in the Lying-In Hospital in the past 2 years he noted a child 10 months of age with pubic hair and enlarged breasts. Operation revealed a granulosis of the ovary. These cases were considered rare until recently. This child had menstruated 3 times for 2 days' duration. The glucose tolerance test was normal. Roentgenograms of the pituitary and long bones were negative. The estrogenic content of the blood was increased to about the same as that of the adult. A left salpingo-oophorectomy was performed. Six months later no evidence of precocity remained. Six weeks after this child was discharged another small child was admitted to the hospital who at operation was found to have a follicular cyst of one ovary.

Granulosis cell tumor may recur as early as 2 years. Most diagnoses are not made until the tumor reaches the laboratory. Some are seen after the menopause, with some bleeding and enlargement of the uterus. Dr. Lull then discussed emergency operations on pregnant women. He advised that a vaginal examination should never be made on a patient at term who is bleeding unless everything is ready for an immediate operation, as often upon such examination a great gush of blood will follow.

Prior to 1934 internal podalic version was being performed regularly in placenta praevia. All cases of placenta praevia should have a cesarean section. Everything must be ready to give a blood transfusion. The blood bank is important and rapid. Transfusion should be given before the patient leaves the operating room.

There is no operation more abused than cesarean section and yet there is none with a more logical place. The essayist felt that he never did one unnecessarily. One should always be convinced that the operation is justified before it is undertaken and preferably before the patient goes into labor. Success rests on the time the section is performed, the type of operation, and the kind of anesthetic used. Cases with ruptured membranes and in labor should have a low cesarean section. If it is a case of placenta praevia, the classical cesarean section is done.

The discussion was opened by Marshall C. Rumbaugh, of Kingston, who favors the use of spinal anesthesia in cesarean sections.

Joseph J. Kocyan stated that one learns by (1) reading, (2) studying, especially the cases ending fatally, and (3) exchanging experiences with other physicians. He then asked Dr. Lull about the use of the roentgenogram in localizing the site of the placenta.

Dr. Lull, in closing, said he never uses spinal anesthesia in his cesarean sections. Intravenous anesthesia is used in England, but it is not liked here. Analgesia has been used a lot in the past 10 years, and yet the perfect drug or method has not been found. Deep roentgen ray is used often to outline the site of the placenta but do not inject the bladder.

MARJORIE E. REED, *Reporter.*

LYCOMING

Feb. 14, 1941

The regular monthly meeting of the society was held in Medical Hall at the Williamsport Hospital. F. Raymond Adams, president, presided.

Following the usual business session, Theodore R. Fetter, associate in neurology at Jefferson Medical College, Philadelphia, spoke on "Urogenital Infections, with Particular Emphasis on Their Treatment with the Drugs of the Sulfanilamide Series." The treatment of urinary infections has changed immeasurably in the past few years, but as always the only satisfactory method of treating these infections is to make a smear, and if necessary a culture, from the urine, so that the proper drug can be used in the treatment. Too many physicians are still prone to use any antiseptic for any infection, with the constant hope that one or the other will bring the desired results. Once the organism is identified, it becomes a relatively simple matter to use the proper medicine and to secure satisfactory results.

Amidst the furor and the frenzy aroused by the sulfonamide drugs, we must not forget that methenamine, urotropin, and mandelic acid remain valuable therapeutic drugs, but their value must depend on a sufficient concentration and proper urinary acidity.

In 1937, sulfanilamide, whose action today remains unknown, was introduced. We have learned certain things in using it. One of the most important of these is that if an adequate response is not secured within 3 days, particularly in gonococcic infections, the drug may be considered inefficient and should be stopped. Sulfathiazole is now replacing mandelic acid and sulfapyridine and certainly is the drug of choice in the treatment of urogenital infections caused by the Staphylococcus aureus, the proteus bacillus, the colon bacillus, the Streptococcus faecalis, or the aerobic bacillus, especially pyogenous. It is important to watch the reaction of the urine, and particularly in Streptococcus faecalis infections the *pH* must be acid.

The sulfonamides have little effect in nonspecific prostatitis. If, however, the prostatic organisms are also present in the urine, the drug may well be used. Dr. Fetter feels that 40 grains a day is enough for sulfanilamide and the same dose of soda bicarbonate with it. Sulfanilamide should not be used more than 2 weeks, then stop and, if necessary, repeat the course later.

Routine white blood counts are obligatory in the continued use of the sulfonamides. It is wise to watch closely in an effort to prevent the formation of crystals in the kidney and urinary tract in the use of sulfapyridine.

In the treatment of gonorrhea, sulfathiazole, in daily doses of 60 grains, is the drug of choice, with the total dosage not exceeding 750 grains. It is wise to administer sodium citrate during this course of treatment. The same dosage may be used in women, but toxic manifestations are more likely to be observed. Any patients taking sulfonamides should avoid sunlight.

Dr. Fetter concluded his presentation by showing numerous slides, illustrating unusual and anomalous urogenital lesions. This interesting and informative paper, discussed by Drs. West, Grieco, Wilcox, and Smith, was of distinct benefit to the members of the society, and we are very grateful to Dr. Fetter.

EDWARD LYON, JR., *Reporter.*

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SCHUYLKILL

Feb. 11, 1941

The regular monthly meeting was held at the Elks Club, Pottsville, at 9 p.m., President Peter B. Mulligan presiding. Following routine business, tentative plans for 1941 seminars were formulated. Those of previous years having been well received by the membership, this year's seminars should be enthusiastically supported. The question of remitting the dues of our members answering our country's call to duty in the Army or Navy was discussed. The consensus of opinion was that this should be done in toto if the State Society waived its per capita tax.

Under scientific business the chairman presented Harrison F. Flippin, of Philadelphia, as speaker of the evening. Dr. Flippin is on the faculty of the School of Medicine of the University of Pennsylvania, and is a member of the State Medical Society's Commission for the Study of Pneumonia Control which has been doing outstanding work throughout Pennsylvania. Dr. Flippin's subject was "Recent Advances in Sulfonamide Therapy," a brief summary of which follows:

At the present time the drug of choice in the treatment of pneumococcic pneumonia is sulfathiazole because of its proven therapeutic effectiveness and low degree of toxicity. It was pointed out that the intelligent use of sulfathiazole in pneumonia demands an understanding of its behavior in the body as well as certain underlying principles of therapy:

1. A large initial dose of the drug (45 to 60 grains) is given, which is followed by 15 grains every 4 hours, day and night, until definite clinical cure is obtained.

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2. In view of the fact that the drug is almost entirely excreted by the kidneys, it is important that the patient's urinary output be maintained at least at 1200 c.c. daily in order to facilitate the excretion of the acetyl sulfathiazole from the body.
3. The only contraindication to the use of sulfathiazole is the history of a previous sensitivity to one of the sulfonamide drugs.
4. Sulfathiazole may be used in conjunction with any other form of medication.
5. It is impossible to formulate definite indications for the use of sulfathiazole plus serum, as each case must be considered as an individual problem. In general, however, it may be said that if after 24 to 48 hours of sulfonamide therapy there fails to be any definite clinical response, then the patient should receive the benefit of combined therapy.
6. It is important that the patient be watched closely for evidence of sulfathiazole toxicity.

In conclusion, a new sulfonamide drug for pneumonia, sulfadiazine, was discussed briefly. In view of its therapeutic effectiveness and lower toxicity, it will probably replace sulfathiazole as our chief therapeutic reliance in the treatment of pneumonia.

T. Lamar Williams, *Reporter.*

WARREN

Feb. 17, 1941

The speaker at this meeting of the society was Fred E. Ross, of Erie. He spoke on "The Hazards of Prematurity." There have been no new developments in obstetric practice in the past 20 years that have reduced the mortality of the premature infant. There is a wide divergence in the figures quoted concerning the frequency of immature births (5 per cent to 35 per cent), but if an average of 17 per cent is more nearly correct, calling attention to this group may lessen the neonatal mortality since 50 per cent of the deaths of the newborn are due to prematurity and occur during the first 2 weeks of life. Eighty-five per cent of such deaths are caused by some form of respiratory failure and therefore the important thing is to establish proper respiratory function.

Dr. Ross described the various theories relative to asphyxia. He propounded one of his own. He showed that intra-uterine respiratory movements occur 3 times as rapidly as those of the mother; that there is a tidal wave of amniotic fluid going in and out of the fetal lungs. This fluid is saline in nature; thus the fetus is enveloped in a kind of salt sea and, if not fully mature, is not readily adapted to a dry environment. A great transformation is necessary.

He called attention to some recent research by Blackfan and Yoagler, as published in *Archives of Pediatrics,* who reduced the mortality from 28 per cent to 0.7 per cent by placing the premature infant in a highly humidified atmosphere—a temperature of 77 F. with a humidity of 65 per cent. There was less gastric disturbance and more rapid gain in weight. The premature infant is lacking in skin fat and the sweat glands are not completely mature; therefore, the humidity in external air must simulate the wet environment in the uterus until these other organs can adapt themselves.

The fetus swallows and absorbs amniotic fluid. Anesthetics and sedatives administered to the mother during delivery interfere with respiratory movements and tend to produce asphyxia. The premature infant has weak muscles of respiration. Warmth is important to aid in the heat control, but high humidity is most important

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The talk was most suggestive and stimulating. There were 34 members in attendance.

Drs. Anderson, Africa, M. V. and W. L. Ball, and Beals were hosts for the dinner which followed.

Michael V. Ball, *Reporter.*

WASHINGTON

Jan. 8, 1941

President George L. McKee presiding, the monthly meeting of this society was called to order, at 8:30 p. m., in the Oval Room of the George Washington Hotel, Washington; 26 members and 2 visitors were present. The meeting was preceded by the usual premeeting dinner.

Reference was made to the recent death of Ralph E. Cummings, Bentleyville, a member of this society, who was injured by coming in contact with a high voltage current, in connection with his roentgen-ray outfit, while preparing to radiograph a patient.

George B. Frantz, a faithful member for 41 years, was elected to affiliate membership.

The president introduced Leo D. O'Donnell, of Mercy Hospital, Pittsburgh, who took as his subject "Injuries of the Knee Joint." Dr. O'Donnell said, in part:

The tissues about the knee which are most often damaged are the synovial sac, the lateral ligaments, the cruciate ligaments, the semilunar cartilages, the patellar attachments and the patellar tendon, the latter's bursa, and the tendon's attachment.

Synovitis may be acute or chronic. The former follows acute knee strain. It may be simple, hemorrhagic, or suppurative. Treatment is aspiration. If the acute form is undiagnosed, or treated and injured frequently, we soon have chronic synovitis. In this there is relaxation of the joint ligaments, loss of apposition of the articular surfaces, and weakness of the knee joint.

Intermittent synovitis or hydrarthrosis is found in young adults. The effusion recurs periodically, is usually bilateral, and not necessarily due to activity. Synovectomy is indicated in the absence of a positive Wassermann reaction.

Congenital syphilis in children, if untreated, may cause synovitis of the knee joint. Hematoma of the joint may occur in known hemophiliacs. It must be treated conservatively—rest for a month and a brace that relieves the joint of weight.

Internal lateral ligament injuries are produced by a force driving the joint into valgus, or by external rota-

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tion of the leg when the knee is semiflexed. Injury of the external lateral ligament occurs if the force is directed to produce varus.

Cruciate ligament injuries are the result of force producing forward or backward luxation, rotations and dislocations of the joint. The treatment of these tears demands immediate immobilization of the joint in complete extension. Effusion requires aspiration. A pressure bandage should be used for 24 hours, then a plaster cast should be applied from ankle to groin, permitting weight-bearing with crutches.

Rupture of the quadriceps tendon is due to a great force causing sudden contraction of that tendon. Immediate surgical repair is indicated.

Patellar tendon injury is caused by frequent trauma, falls or kicks. It is associated with osteochondritis of the tibial tubercle, which heals rapidly following the drilling of the tubercle and introduction of bone pegs.

Another injury is that of the hamstring tendon, which is sometimes complicated by injury to the external popliteal nerve, causing "foot drop." The joint should be immobilized between 45 and 60 degrees for 2 weeks and gradually brought to extension.

Fourteen bursae of the knee are described. Three are of clinical importance—the prepatellar bursa, the superficial infrapatellar bursa, and the deep infrapatellar bursa. These may become chronically inflamed, may calcify, and sometimes ulcerate, particularly in syphilitic individuals.

Bursae of the popliteal space are called ganglia, knee joint herniae, or Baker's cyst. Prepatellar and infrapatellar bursae are aspirated. If the infection is pyogenic, the bursa is drained; if tubercular, it is incised, the granulation tissue scarified by gauze, and closed tightly. If there is a calcified hematoma, it is removed. The popliteal bursa is excised. A tight bandage is applied following treatment, in any of the cases mentioned, for 5 to 10 days.

The internal semilunar cartilage is attached to the anterior cruciate ligament, and anterior and posterior parts of the internal lateral ligament, hence is subject to the various types of trauma that influence these ligaments. It is ruptured by a twisting force when the leg is partly flexed.

In chronic cases of internal semilunar dislocation any action that requires flexion of the leg or thigh may permit the loose cartilage to lock the joint.

The external lateral ligament is less likely to be injured, except directly. The incidence of external to internal semilunar cartilage injury is 1 to 15.

Cysts frequently occur in the external semilunar cartilage. A tense lump is found above the tibial condyle. The cause is unknown. Treatment is excision.

Pellegrini-Stieda disease is characterized by the formation of a semilunar-shaped bony mass in the internal lateral ligament, at the internal condyle of the femur. The etiology is trauma. Wait for excision until the bony mass matures. Following excision, immobilize for 10 days. Use a knee brace. Active motion is begun after 3 months.

Epiphysitis of the tibial tubercle (Schlatter-Osgood disease) should be treated conservatively. Of 106 cases, Campbell advised operation in only two. One refused, and the other had a good result.

Acute osteomyelitis of the upper end of the tibia or lower end of the femur should be mentioned in connection with knee joint troubles. In this the pathology is, of course, outside the joint, and involves the joint only late in the course of the infection. It usually starts with a history of an accident. The patient complains of severe pain which he considers in the knee joint. The life of the patient may depend on a prompt diagnosis. Treatment is immediate surgical interference, with through drainage of the bone, blood culture, identification of the organism, and chemotherapy if indicated.

Sixty per cent of blood stream infections caused by the staphylococcus recover with proper drainage. Forty per cent require chemotherapy. Five hundred grains of sulfathiazole may be given by mouth. The blood level should not rise above 2.84; otherwise discontinue the drug. Locally 70 grains may be introduced into the wound every other day.

ROBERT W. DUNLAP, *Reporter.*

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WYOMING

Feb. 12, 1941

The society and its woman's auxiliary held a regular meeting at Tunkhannock with lunch at noon.

After a short business meeting, the guest speaker, J. Norman White, surgical chief of Moses Taylor Hospital, Scranton, gave an informal talk on "Goiter."

The society was made aware of the fact that the medical program for the clients of the Farm Security Administration went into effect Feb. 1 in Wyoming County.

To date all of our members but one have paid their dues. Arthur B. Davenport, *Secretary.*

YORK

Feb. 15, 1941

Chevalier L. Jackson, professor of broncho-esophagology at Temple University Medical School, Philadelphia, spoke on "Broncho-esophagology as it Affects General Medicine." He said in part:

There is more to bronchoscopy and esophagoscopy than the mere endoscopic visualization. Many diseases are to be examined and treated after diagnosis is made. The more common diseases are tumors, abscess, pulmonary suppuration, and tuberculosis.

A fair proportion of patients with lung abscess can be treated by bronchoscopic aspiration in conjunction with the internist and roentgenologist. Bronchiectasis, if seen early, can be greatly ameliorated, if not cured.

In tuberculosis, where there are symptoms such as a wheeze, a positive sputum, but no definite parenchymatous lesion, one should think of tracheobronchial tuberculous lesions, either as superficial ulceration with obstruction or deep ulceration and obstruction. In the superficial ulceration, cauterization with silver nitrate is indicated, but not the actual cautery; in deep ulceration, actual cauterization is used.

In tumors the location of the tumor is of paramount importance, both for biopsy and for treatment. Most tumors are malignant, but the bronchial adenoma as occasionally seen in younger persons responds satisfactorily to removal through the bronchoscope and recurrences are rare. In malignant tumors, when diagnosed early, lobectomy or pneumonectomy is the operation of choice. Roentgen irradiation or radium irradiation has never produced a cure.

In atelectasis the endobronchial or extrabronchial cause must be determined and, except in the postoperative types, neoplasm or enlarged lymphatics should be sought for.

In discussion, Charles L. Fackler, York, asked whether the bronchoscope should be used after an acute respiratory infection, where a small thick plug of material might cause postoperative atelectasis. The use of the bronchoscope in tuberculosis, as also elaborated upon by Myerson of New York, was brought out very nicely.

Harry M. Read, York, asked the value of segmental pneumonectomy in pulmonary suppuration, such as bronchiectasis. Is it not necessary for a team of bronchoscopists, internists, roentgenologists, and pathologists to work in all pulmonary lesions of obscure nature?

Dr. Jackson, in closing, stated that the bronchoscope is useful in tuberculosis when the diagnosis is unconfirmed by other methods.

Bronchoscopy is no longer taboo in pulmonary tuberculosis, despite former opinion, but is contraindicated generally in severe tuberculous laryngitis.

Dr. Jackson is greatly interested in segmental pneumonectomy, as is Dr. Burnett of Temple, but this is not of much importance to the general practitioner.

John J. Conroy, *Reporter.*

COURT RULING ON THE IMPORTANCE OF HOSPITALS

"Efforts on the part of unions in Pennsylvania to unionize hospital employees were recently surveyed critically in connection with a case decided by the Supreme Court of Pennsylvania on Jan. 6," *The Journal of the American Medical Association* for Jan. 18 says in an editorial. "Apparently, attempts to form a union among hospital employees were opposed by the officials of some 25 hospitals involved. The hospitals refused to execute a proposed agreement with the unions or to negotiate any agreement, and the unions then appealed to the Pennsylvania Labor Relations Board, charging unfair labor practices on the part of the hospitals. The matter came before the court of common pleas of Dauphin County when the hospitals filed a bill for an injunction to restrain the Labor Relations Board and the unions from proceeding with the plans under consideration. This petition stated that the formation of a union among hospital employees would result in demands of such a character as to jeopardize the financial ability of the hospitals to function and that efforts to enforce these demands by strikes or otherwise would seriously imperil the management of the hospitals and the lives, health,

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and safety of the patients. It was pointed out that the demands already made would entail an increased yearly outlay of more than $2,000,000 and would, if granted, in effect transfer control of the hospitals from their officials to the unions. The lower court granted the preliminary injunction, giving the relief sought, and the defendants appealed to the Supreme Court of Pennsylvania, which in a per curiam decision affirmed the decree of the court below.

"The first question disposed of in this case was whether the State Labor Anti-Injunction Act prevented the court from issuing the injunction sought by the hospitals. That act applies to situations involving or growing out of 'a labor dispute when the case involves persons who are engaged in a single industry, trade, craft, or occupation.' In holding that this act had no application to the facts involved in the case before it, the court asserted that a hospital is not an industry nor are the employees of a hospital engaged in a single trade, craft, or occupation. Student nurses, the court pointed out, interns, physicians, surgeons, clerks, stenographers, bookkeepers, elevator operators, ambulance drivers, laundresses, mechanics, technicians, charwomen, and others may be employed by a hospital and they may have a common employer but they have no single trade, craft, or occupation. Giving the words 'industry, trade, craft, or occupation' their commonly accepted meaning, the court did not feel that they include the operations of a hospital. 'Even though the words of the statute be interpreted as broad enough to include the operations of a hospital,' the court continued, 'we do not think that the legislature intended such a result. The purpose of the act is to preserve the status quo during labor disputes, to insure the right to bargain collectively, and to give to employees the right to choose representatives for this purpose. To show the scope of the act, the legislature attempted to define cases which "involve or grow out of a labor dispute." In doing so, it used the words "industry, trade, craft, or occupation." It has not been the custom in the past to unionize hospitals. The effect of unionization and attending efforts to enforce demands would involve results far more sweeping and drastic than mere property rights. The question of profit for the employer or wages for the employee are not alone involved. It is not merely a matter of suspending operations, ceasing work and stopping production, such as might be true in a steel mill or automobile factory. It is a question of protecting the health, safety, and, in many cases, the very lives of those persons who need the service a hospital is organized to render. The results are quite different and more extensive than are involved in an ordinary labor dispute. We cannot conceive that the legislature intended to include hospitals within the purview of the act. Consequently, even though the words used might conceivably be broad enough to include a hospital, nevertheless, a hospital is not within the spirit of the act, and not being within the spirit, the act does not apply to it.'

"Another question before the court was whether the Pennsylvania Labor Relations Act, designed to protect the right of employees to organize and bargain collectively, had any application. 'Hospitals are scientific institutions,' the court said, 'created for a humane purpose in amelioration of the sufferings of mankind. They require for their successful operation highly skilled physicians, surgeons, technicians, experts, and nurses. They likewise require the services of other persons, some of whom may be skilled and some unskilled. But the whole must be co-ordinated, controlled, and uninterrupted to accomplish the general purpose. This would be impossible, should we hold the Labor Act applicable with all its attending ramifications, interruptions, and possible cessation of service due to labor disputes and attending financial inability to function.'

"In addition, the court pointed to the fact that the term 'employer' as defined by the Labor Relations Act excludes the commonwealth or any political subdivision thereof. While the hospitals involved in this case are not political subdivisions, the court said, they are, with few exceptions, agencies selected by the commonwealth as a means of assisting in some degree the indigent sick, disabled, injured, or afflicted. 'Should the state choose to operate general hospitals,' the court pointed out, 'as it does certain mental hospitals, no one would claim that it was not performing a function of government and in so doing is not an employer within the meaning of the act. Since the state chooses to perform this function through agencies, supported in part by state appropriations, these agencies are likewise beyond the scope of the act. Were this not so, the appropriations might be diverted from their intended purpose to aid the indigent sick and injured to the payment of wages and increased operating costs.' To the court it was obvious and indisputable that the hospitals involved in the case were impressed with a public interest which removed them from the purview of the Labor Relations Act.

"The opinion of Judge Richards in this case, which the Supreme Court characterized as 'comprehensive,' constitutes an important contribution to judicial literature and evidences a thorough understanding of the extremely important part played by hospitals in preserving the 'health, safety, and, in many cases, the very lives' of the people."

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THE WOMAN'S AUXILIARY

MRS. GEORGE C. YEAGER, *Editor*
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PUBLIC RELATIONS WORK

Dear Auxiliary Members:

Mrs. Lick, our president, has asked me to use the space usually devoted to her monthly letter to you. She feels, as most of us do, that public relations work is one of the most important phases of our auxiliary endeavors.

What do we mean by public relations? Our national chairman has stated her definition as follows: "The public relations department of any organization, business or fraternal, has to do with substituting truth for mistaken and distorted conceptions between an impersonal organization and some very personal person." Therefore, it behooves auxiliary members, through their public relations work, to inform the public clearly of the ideals and accomplishments of the medical profession.

How can we best bring about this understanding between the laity and the medical profession? There are many ways in which we as auxiliary members can do this, but naturally we must be guided by the specific needs in each community and by the direction and suggestions of our local advisory committees.

Perhaps one of the most effective means of attaining this goal is by close contact and cooperation with lay organizations. Many auxiliary members are also members of women's clubs, parent-teacher associations, and various study groups. Suggest to the program chairman or president of these organizations the advisability of one or two health programs each year. Then further assist by providing qualified medical speakers from your county society.

Make an effort to place *Hygeia* in every possible home and school. Institute essay contests on health subjects; acquaint yourselves with local health needs; lend active assistance to all approved health projects; wherever possible conduct one Health Institute a year. Lastly, but equally important, be informed on medical issues, so as to answer intelligently questions of lay individuals.

I know you are all thinking that all of these things have been said many times before. That is very true, but we cannot repeat them too often or put too much stress upon them, because of their great importance.

I hope every county auxiliary is carrying out some phase of public relations work this year, and wish for you the greatest success in whatever you undertake.

Cordially yours,
Erma (Mrs. James D.) Stark,
Chairman of Public Relations.

APPEAL FOR MEDICAL SUPPLIES AND DISCARDED SURGICAL INSTRUMENTS

Dear Councilor:

At the Executive Board meeting of the Woman's Auxiliary to The Medical Society of the State of Pennsylvania, held in Harrisburg on Jan. 30, Mrs. George E. de Schweinitz made an appeal for medical supplies and discarded surgical instruments to be used in England and Greece in their emergency hospitals and first-aid posts. The aforementioned instruments would be sent to New York for reconditioning and sorting purposes.

The board registered its approval of any assistance that could be given to the deserving British, but stated that it cannot be undertaken as a state project at the present time. However, if any county auxiliary wishes to aid in this beneficent work, it may be taken up as an additional activity. This holds true only in the event that the group has the consent of the advisory council of its county medical society.

If this work is undertaken, the individual auxiliary could set aside at least one meeting, at which time these voluntary contributions could be packed by its members and shipped to the Medical & Surgical Supply Committee of

America, 420 Lexington Avenue, New York City, at the expense of the county auxiliary.

Very sincerely yours,

Elizabeth G. (Mrs. Charles C.) Crouse,
Chairman of District Councilors.

COUNTY AUXILIARY REPORTS

Allegheny.—The auxiliary celebrated its sixteenth year with a birthday party on Jan. 28 in the Cardinal Room of the Hotel William Penn, Pittsburgh. There was a splendid attendance in spite of widespread sickness and the uncertainty of the weather.

At 12 o'clock visiting and local state officers of the auxiliary and our own board met for lunch in the Aero Room. Following the luncheon hour, the doors of the Cardinal Room were opened and the members began to assemble for the third meeting of the fiscal year. The president, Mrs. Jay G. Linn, called the meeting to order and various reports were read; at least 2 of these should be of great interest to all members. The first one was that of Mrs. Joseph A. Soffel, membership chairman. Mrs. Soffel introduced 30 new members to the auxiliary and presented each with a red carnation, symbolic of warm friendship and welcome. The second report of importance was that of Mrs. Homer W. Grimm, chairman of our annual benefit, which was scheduled for Mar. 27 in the Hotel Schenley. Mrs. Grimm said that the committee was planning a novel and enjoyable evening.

Mrs. Maxwell Lick, president of the State Auxiliary, Mrs. Charles C. Crouse, president-elect, and Mrs. John H. Gemmell, councilor of the Tenth District, were our honored guests, and each had a word of greeting and encouragement.

Mrs. Lick, who was introduced by Mrs. Walter F. Donaldson, herself a former state president, spoke at some length about the influence of the medical profession on the destiny of nations. She stressed the fact of how little the child or the man of today realizes that battles are won, nations saved, and science advanced because of the physician. He heals the wounds of battle, or an army might perish. He gives his life to prove to a doubting people the source of a virulent infection, and saves a nation. He sweeps clean the disease-infested swamps and crowded slums of our great cities so that science might realize her long-cherished dreams. Yet man cries, from the watchtower of nations, the names of generals and statesmen who have delivered them from their enemy, forgetting the little man with the kindly face, and the understanding heart, who carries in his small black bag the destinies of nations.

The program was further enriched by Miss Genevieve Bell, who explained the work that the Public Health Nursing Association is doing, not only for the poor but for all classes of society who need daily nursing and assistance in the care of the sick. Miss Bell is very interested in her work, and told how the association is often called "the hospital that walks upstairs" because the public health nurse brings comfort, relief, and helpful knowledge with every visit.

The meeting came to a close with Mrs. David B. Ludwig, former president of the auxiliary, presenting in skillful satire the records of all the past presidents of the auxiliary.

After the meeting, tea was served.

Only a few more weeks and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Cleveland for their annual convention, June 2-6. Have you made your reservations? If not, send your request, *at once,* to Dr. Edward F. Kieger, chairman of Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland, Ohio.

Berks.—On Feb. 10, Edward L. Bortz, M.D., president of the Philadelphia County Medical Society and chief of Medical Service B, Lankenau Hospital, Philadelphia, was guest speaker at the Health Education Day meeting. This annual event, open to the public, attracted nearly 100 members and guests, who were enthusiastic over Dr. Bortz's discussion of diabetes and greatly interested in the colored motion pictures of Camp Firefly, with which he illustrated his talk. Hope for a long and useful life for the diabetic patient was held out by Dr. Bortz, who said, "Not only can the diabetic enjoy life but he can, in many cases, outlive the nondiabetic by observing proper treatment and care."

Beginning his talk with an easily understood explanation of diabetes, Dr. Bortz proceeded to a discussion of treatment. He stressed the importance of preventing fatigue, explained the various types of insulin administration, told how easily the diet can be followed, and pointed out the fallacy of "diabetic foods."

Camp Firefly is a camp for diabetic children only and is sponsored by the John B. Deaver Auxiliary of the Lankenau Hospital. At this beautiful camp, on the banks of the Perkiomen Creek, 50 to 60 young diabetics are cared for during 2-week periods in the summer. The activities of the camp, which is directed by Dr. Bortz, range from teaching the children to weigh their own food and to administer their own insulin to carefully supervised outdoor sports and handicrafts.

Following Dr. Bortz's lecture, Chester K. Kistler, M.D., president of the Berks County Medical Society, presented awards to the winners of the Health Essay Contest conducted by the auxiliary in the high schools of Berks County. Eleven schools entered the contest and 168 essays were submitted. Six prizes were awarded.

At the conclusion of the program, tea was served at a table decorated in the Valentine theme with red lace paper hearts, red candles in silver candlesticks, and a beautiful centerpiece of red carnations and white snapdragons. Mrs. Bortz was the guest of honor.

The January meeting was devoted to sewing for the Red Cross.

Blair.—The auxiliary enjoyed a delightful business and luncheon meeting on Jan. 27 at the Hotel Penn Alto, Altoona. The president, Mrs. L. Clair Burket, presided.

The secretary's and treasurer's reports were given by Mrs. D. Gordon Burket and Mrs. George E. Alleman. Due to the absence of several committee chairmen, their reports were deferred until the next meeting. It was decided, however, to again place free copies of *Hygeia* in the high schools.

Mrs. William R. Brewer gave some interesting excerpts from the *Bulletin,* which is the official publication of the National Auxiliary. This was followed by an open forum period.

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V-24

It was announced that the state president, Mrs. Maxwell Lick, of Erie, and our district councilor, Mrs. Walter Orthner, of Huntingdon, will make their official visit to us at the April meeting. The social committee will make plans for this affair, at which time there will also be a reception for the new members.

Chester.—The auxiliary met on Feb. 18 at the Pennsylvania Epileptic Home at Oakbourne, with Kenneth Scott, M.D., as host. There was a good representation of members present. The members of the auxiliary joined the members of the medical society at luncheon.

Mrs. Henry Pleasants, Jr., presided over the meeting in the absence of the president and vice-president. Routine business was transacted and Mrs. H. Bailey Chalfant, the treasurer, reported a balance of $63.40.

Miss Livingood, secretary to Dr. Scott, spoke of the lives of the patients in the Home and of the various types of work that are accomplished. Miss Hetzel, who has charge of the occupational therapy department of the school, told of the weaving, woodwork, basketry, and other arts taught the patients, and exhibited a number of articles made by them.

Robert T. Devereux, M.D., president of the Chester County Medical Society, brought greetings from the society and expressed appreciation for the work the auxiliary is doing.

The March meeting was to be a covered dish luncheon at the home of Mrs. Clarence S. Kurtz in Malvern.

Crawford.—The regular monthly dinner meeting of the auxiliary was held at the Kepler Hotel, Meadville, Jan. 22, following a special meeting of the executive board. Mrs. William H. Brennen, hospitality chairman, and her acting hostess, Mrs. John H. Bailey, and committee (Mrs. R. Bruce Gamble, Mrs. Frederick H. Muckinhaupt, Mrs. Joseph A. Mancuso, and Mrs. Maurice T. Leary) formed a very hospitable group, providing attractive table decorations of spring daffodils, which were later sent to several members who were sick and unable to attend.

The guest of the evening was Mrs. Giddens, wife of the speaker, Dr. Paul H. Giddens, of Allegheny College, who talked to the 30 members present on the interesting and instructive subject, "If England Fails," at the conclusion of which the meeting adjourned and the women joined the physicians in bowling at Berchtold's Recreation Hall. The auxiliary league has 25 active members bowling each week. On Tuesday, the twenty-eighth, they were luncheon guests of the chairman, Mrs. George E. Hayward, at the Meadville Inn. A business meeting at her home preceded the afternoon of bowling.

Dauphin.—The meeting of the auxiliary was held on Jan. 21 at the Academy of Medicine, Harrisburg.

After a short business meeting, Mrs. Richard J. Miller, diseuse, accompanied by Mr. James Mannix, presented her original composition, "St. Francis of Assisi." Tea was served at the close of the meeting with Mrs. George H. Seaks as hostess.

The February meeting of the auxiliary was held on Feb. 18 at the Academy of Medicine. Plans were completed for the bridge-tea to be held Feb. 22.

The program for the meeting consisted of a review of nonfiction books. Tea was served following the meeting.

Delaware.—On Jan. 31 the auxiliary held a delightful card party at the home of Mrs. E. Arthur Whitney at Elwyn. About 80 auxiliary members and their friends attended. The proceeds were turned over to the British War Relief organization for medical necessities in their stricken countries.

At the regular meeting on Feb. 13, in the Chester Hospital Solarium, after a business session, Phyllis Gilmore Beattie, drama chairman of the Philadelphia Federation of Women's Clubs and president of the Canadian Women's Club of Philadelphia, entertained us with a dramatic reading of Alice Duer Miller's poem, "White Cliffs."

As a help in building up the Medical Benevolence Fund, the auxiliary is starting a "talent drive," whereby each member is asked to contribute $2.00 earned through her own efforts.

Lackawanna.—A Medical-Historical Quiz, somewhat similar to our very successful "Information Please" quiz of last year, followed the regular meeting held on Feb. 11 in the Chamber of Commerce Building, Scranton.

Mrs. Louis A. Milkman, president, presided at the business meeting, and reports were given by officers and committee chairmen. Miss Sadie Falkowsky spoke on behalf of the City Improvement Committee, sponsored by the Century Club, and a vote of co-operation was given her on this project. Upon a motion, seconded and carried, the following members were named as representatives of the auxiliary to attend the Americanism Meeting of the American Legion Auxiliary, Koch-Conley Unit of Post 121, which was held Feb. 12: Mrs. John D. Butzner, Mrs. Michael J. Stec, and Mrs. D. Anthony Santarsiero.

The meeting was then turned over to Mrs. William J. Corcoran who, assisted by Mrs. Stephen I. Rosenthal, Jr., directed the quiz, which proved to be highly interesting and instructive. To those who answered questions correctly, cash prizes were awarded. Mrs. Vincent A. Andriole was chairman of the program.

Mrs. J. Norman White, program chairman, then introduced Mrs. Florence Rozelle, soprano, who sang a group of songs accompanied by Mrs. T. Russell Evans.

An executive board meeting was held at Mrs. Milkman's home on Jan. 31, at which time plans were discussed for the remainder of the auxiliary year. Tea was served with Mrs. William T. Davis and Mrs. James D. Lewis pouring.

Lycoming.—In keeping with the "American way," which calls for bigger and better events year by year, the auxiliary sponsored the annual ball in the Lycoming Hotel at Williamsport, which proved to be one of the most successful in the history of the organization. This lively and colorful occasion, regarded by both the city and county as one of the outstanding social affairs of the year, attracted more than 1000 members and guests, and netted $1300 to support the eleemosynary objectives of the auxiliary.

In the language of the "movies," this 5-star feature event brought to light 4 all-stars of the ticket team, according to Mrs. P. Harold Decker, who served as chairman of the hard-working ticket committee. While many members came to the fore this year in this part of the work, the 4 star performers were Mrs. Galen D. Castlebury, Mrs. Herman Finkelstein, Mrs. James H. Burrows, and Mrs. J. Louis Mansuy. These 4 stalwarts not only upheld the reputation they already enjoy

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for service to the auxiliary but added new glory to their shining record.

At a time when we hear so much about all-out aid to needy humanity, the Lycoming County Auxiliary is manifesting an alert social consciousness in at least 2 respects. Of the $1300 realized from the annual dance, $600 has been earmarked for the purchase of a sterilizer for the City Hospital, and $250 more for the Medical Benevolence Fund of the State Medical Society. These constitute telling contributions toward the comfort and welfare of folks in this part of Pennsylvania. In another respect, this gala ball contributes appreciably to human welfare, for by joining together the members of the profession in the wholesome atmosphere of sociability, recreation, and enjoyment, this happy event engenders a solidarity and morale among the members of the profession that could be achieved in no other way. A profession buttressed by these important qualities will inevitably prove more efficient and persistent in waging war on the diseases and infirmities that beset suffering mankind.

Thus, another significant achievement becomes a part of the rich history of the Lycoming County Auxiliary.

Somewhat smaller in scope, yet unique in character, was another event in the social calendar of the auxiliary, which turned out to be more than an ordinary occasion. Following a stubborn siege of "flu" which persisted in the city and county for more than 2 months, the thoughtful members of the auxiliary felt that the physicians, who like brave soldiers had been carrying on the battle unceasingly, deserved some respite and reward for meritorious service. Accordingly, the ladies tendered the Medical Society an informal dinner and reception at the Country Club in Williamsport on Feb. 12. Amidst elaborate and colorful decorations featuring both Lincoln Day and St. Valentine's Day motifs, the physicians and their ladies enjoyed both modern and square dancing. A touch of fine distinction was added to the occasion when, at the suggestion of one of the most eminent members of the society, a cotillion was arranged and enjoyed. It was soon discovered that there is nothing like a cotillion to relax the tired nerves of overworked physicians, for all joined in the rhythm of this graceful Terpsichorean form of dancing with joy and abandon. The perfect informality of the affair, together with the delightful dinner, pleasant sociability, and variety dancing made this reception another milepost to be proudly recorded in the eventful history of our growing auxiliary.

Mifflin.—The meeting of the auxiliary which was held on Feb. 18 was different from our ordinary meetings. The courtesy of a tour through the American Viscose Corporation plant at Lewistown was extended to the auxiliary by Mrs. Henry A. Kimmel, whose husband is connected with the corporation as medical director. The ladies met at 2 o'clock and soon were being escorted by a competent guide through the different departments. The processes and changes as we went along were fully explained, starting with the wood pulp of which rayon is made to the finished yarn on spools and in skeins ready to be shipped.

This plant at Lewistown covers 25 acres and is the largest of 7 owned by the Viscose Corporation in the United States. It has employees from Mifflin and all surrounding counties, numbering in normal times around 5000. The cafeteria, recreation rooms, laboratories, offices, and dispensary are equipped with all the modern improvements. The tour was much enjoyed by all.

Tea was served in the assembly room. The table was beautiful with its large centerpiece of calendulas and tall yellow tapers. Mrs. Kimmel presided at the tea table.

Northumberland.—On Jan. 8 the auxiliary held its second meeting in the Nurses' Home of the Shamokin Hospital.

E. Roger Samuel, M.D., trustee and councilor of the State Medical Society and a member of the Advisory Council, gave a talk on "Co-operation of the County Society and the Auxiliary." He was introduced by the program chairman, Mrs. Isadore E. Smigelsky.

The business meeting followed with the president, Mrs. E. Roger Samuel, Mt. Carmel, in charge. Mrs. Ronald B. McIntosh, Selinsgrove, secretary, and Mrs. William B. Lewis made their reports.

Committees were appointed, and the chairmen are as follows:

Program: Mrs. Isadore E. Smigelsky, Mt. Carmel.
Publicity: Mrs. Charles M. Thomas, Sunbury.
Public Relations: Mrs. James A. Hughes, Mt. Carmel.
Ways and Means: Mrs. Joseph D. Millard, Shamokin.
Legislative: Mrs. George M. Bogar, Selinsgrove.
Hospitality: Mrs. Benjamin J. Millard, Mt. Carmel.
Clipping: Mrs. Joseph T. Wasilewski, Kulpmont.
Membership: Mrs. William J. Jacoby, Mt. Carmel, Mrs. Victor J. Baluta, Shamokin, Mrs. J. Guy Smith, Sunbury, and Mrs. Howard F. Straub, Selinsgrove.
Necrology: Mrs. Andrew B. Buczko, Mt. Carmel.
Hygeia: Mrs. J. Guy Smith, Sunbury.

Our district councilor, Mrs. T. Lamar Williams, was with us at this meeting.

On the evening of Feb. 5 the auxiliary held a meeting in the Nurses' Home of the Shamokin Hospital. The By-Laws Committee, under the leadership of Mrs. Peter A. Justin, Mt. Carmel, presented the constitution and by-laws. They were adopted as presented.

Mrs. T. Lamar Williams, our district councilor, gave a most interesting report on her councilor meeting in Harrisburg.

A social time followed the business session.

Philadelphia.—On Feb. 11 the regular meeting of the auxiliary was held in the County Society Building. After a short business meeting, Robert Shoemaker, M.D., radiologist at the Lankenau Hospital, spoke on "The Psychology of the Patient." Pianologues were given by Mary E. Worley, one of our own members, and a dramatic recital by Miriam Lee Early Lippincott on "Lincoln, the Symbol of Democracy." Mrs. Lippincott was the first president of the Woman's Auxiliary to the New Jersey Medical Society.

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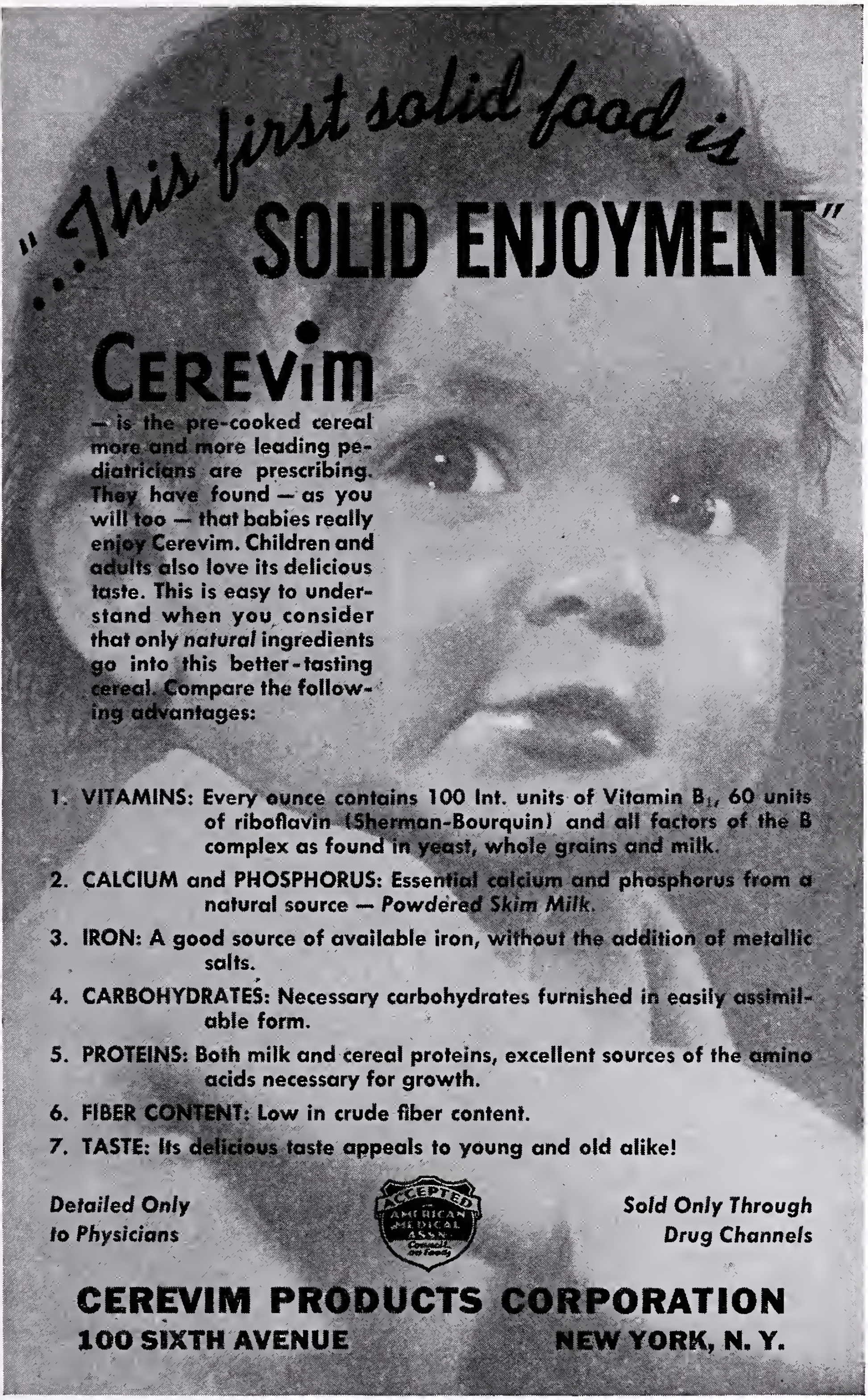
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On Feb. 15 we all enjoyed our annual musicale and card party, which proved a great success. The music was furnished by Burk's Broadcasters, who are 3 well-known Philadelphia artists. The proceeds went to the Medical Benevolence Fund. Mrs. Edward L. Bortz was hostess for this party. There was also dancing, cards, and many door prizes.

On Feb. 22 the mid-winter Junior Dance was held. About 400 invitations were extended to Junior and Senior medical students. This evening proved a very enjoyable one for the young folks, thanks to Mrs. Frank B. Lynch.

Feb. 26 was devoted to a tour of Philadelphia, visiting many historic places. The first stop was the Swedish-American Museum, where Mother Moore gave a splendid talk about her work among the seamen.

Every Tuesday and Friday a large group meets to make surgical dressings for the Red Cross.

Schuylkill.—The meeting held in the Y. W. C. A., Pottsville, Feb. 11, was a most enjoyable one for the members and friends of the auxiliary. In addition to an important business session, a delightful program of entertainment was presented and a tea given. Approximately 45 persons were present.

Committee reports were read and a committee to plan for the annual Health Institute was appointed. A letter from Mrs. James D. Stark, of Erie, state chairman of public relations, was received with interest, and an excellent report was made by the district councilor, Mrs. T. Lamar Williams, of Mt. Carmel.

Following the business session, a program under the able direction of Mrs. John W. Conrad, of Port Carbon, was presented including a unique feature, "Ballad for Americans," a comprehensive story history of the United States given by girls of the Y. W. C. A. in verse, choir style; 3 brief but interesting book reviews by Mrs. John Minich, of Port Carbon, a guest of the auxiliary; and piano duets played by Nancy and Helen Stein, daughters of Dr. and Mrs. Newton H. Stein, New Philadelphia.

Later in the afternoon the members enjoyed a friendly chat as Mrs. Walter A. Bacon, hostess committee chairman, and her assistants served tea, cookies, and confections. The table was lovely in its Valentine dress of red and white. A beautiful lace tablecloth covered the table and the floral centerpiece was an artistic arrangement of deep red carnations, calla lilies, and snapdragons. Two candelabra holding tall, white tapers were placed at the ends of the table. Mrs. Charles V. Hogan, of Pottsville, president of the auxiliary, poured.

Westmoreland.—A meeting of the auxiliary was held at the Hotel Greensburger, Greensburg, on Jan. 27. This meeting took the place of the regular February meeting. The change was made to accommodate the president of the State Auxiliary, Mrs. Maxwell Lick, of Erie, and the councilor of the Tenth District, Mrs. John H. Gemmell, of Beaver. Mrs. Gemmell announced that there will be a meeting of the auxiliaries of the Tenth Councilor District in Beaver on Apr. 17 and urged as many members as possible to attend. Mrs. Lick made a very inspiring address relative to the responsibilities and duties of the wives of physicians.

Shoulder bouquets were given to the guests of honor as well as to Mrs. Charles C. Crouse, president-elect of the State Auxiliary, and Mrs. Paul G. McKelvey, our county auxiliary president. The arrangements were in charge of Mrs. Irwin J. Ober and her committee.

York.—The auxiliary enjoyed a George Washington Tea on Tuesday afternoon, Feb. 11, in the Professional Building, York. Mrs. Elwood P. Flanders, the president, presided over the business session. The treasurer, Mrs. W. Frank Gemmill, reported a balance of $167.68 in the treasury.

It was decided to hold the annual spring luncheon on Mar. 11. Mrs. Thomas Monk was chairman of the committee on arrangements, and Beulah Sundell, M.D., was the speaker.

The annual card party was planned for Mar. 18, and each member of the auxiliary was asked to be responsible for one table. Mrs. Clyde L. Seitz was chairman of this committee.

Mrs. Arthur L. Evans was appointed corresponding secretary to fill the unexpired term of Mrs. Wallace E. Hopkins who resigned.

Mrs. Francis J. Snyder, chairman of the sewing committee, reported that 25 draw sheets were completed. The committee headed by Mrs. Snyder sews one day a month at the York Hospital.

After the business meeting, cards were played.

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MEDICAL NEWS

Birth

To Dr. and Mrs. Norman A. Karmilowicz, of Kingston, a son, Feb. 9.

Engagement

Miss June Drusilla Bowman, daughter of Dr. and Mrs. Frank S. Bowman, of Philadelphia, and Mr. Newton Read, of Merchantville, N. J.

Marriages

Miss Helen Manson to Allen J. Hannen, M.D., both of Williamsport, Jan. 22.

Miss Molly White to George N. Ballentine, both of Williamsport, Jan. 22.

Miss Bettie O'Connor to Anthony F. Kaminsky, M.D., of Erie, Feb. 5, at Childress, Texas.

Miss Anna Marie Springer, of Phoenixville, to Howard Walter Baker, M.D., of Philadelphia, Feb. 22.

Miss Velma Elizabeth Bowser, of Beaver Falls, to John M. Cook, M.D., of Pittsburgh, in October, 1940.

Miss Louise Norse, operating room supervisor of Berwick Hospital, to Paul M. Szutowicz, M.D., of Berwick, Nov. 21, 1940.

Miss Ella Catherine Griesemer, daughter of Dr. and Mrs. Wellington D. Griesemer, of Reading, to Mr. Thomas Martindale, II, of New York City and Philadelphia, Feb. 22.

Miss Mary Stewart Hodge, daughter of Dr. and Mrs. Edward B. Hodge, of Philadelphia, to Charles Alexander Hatfield, M.D., son of Charles J. Hatfield, M.D., and the late Mrs. Hatfield, of Chestnut Hill, Feb. 28.

Deaths

○ *Indicates membership in county medical society, The Medical Society of the State of Pennsylvania, and the American Medical Association.*

○ **William J. Bierer**, Kittanning; University of Pittsburgh School of Medicine, 1897; aged 67; died Oct. 22, 1940.

○ **Clarence C. Bobb**, Lykens; Temple University School of Medicine, 1919; aged 45; died Nov. 16, 1940. He was a Fellow of the A. M. A.

○ **Charles C. Neff**, York; University of Pennsylvania School of Medicine, 1899; aged 69; died on Mar. 4. Dr. Neff was a Fellow of the A. M. A.

Morris A. Goodstone, Pittsburgh; University of Pittsburgh School of Medicine, 1892; aged 73; died at his home on Mar. 5. Dr. Goodstone was a member of the staff of Montefiore Hospital. He was born in Poland.

○ **David D. Custer**, Philadelphia; University of Pennsylvania School of Medicine, 1883; aged 83; died on Jan. 14. Dr. Custer was a Fellow of the A. M. A. He is survived by his wife, Ella Buchanan Custer, M.D., a sister, and a brother.

○ **Ira C. Duncan**, Beaver Falls; University of Pittsburgh School of Medicine, 1912; aged 59; died Dec. 30, 1940. He was a Fellow of the A. M. A. Dr. Duncan is survived by 3 daughters and one son.

○ **Lloyd A. Heikes**, Lemoyne; Medico-Chirurgical College of Philadelphia, 1910; aged 58; died on Feb. 3. Dr. Heikes was a Fellow of the A. M. A. He is survived by his wife, a sister, and a brother, Francis L. C. Heikes, M.D., of Mechanicsburg.

John W. Fawcett, McKeesport; Jefferson Medical College of Philadelphia; aged 87; died on Mar. 5. Dr. Fawcett was prominent in civic affairs and in addition to his medical practice was proprietor of a drugstore for many years. He is survived by his wife.

○ **Charles Rea**, York; Medico-Chirurgical College of Philadelphia, 1894; aged 69; died on Jan. 26. At the time of his death, Dr. Rea was chairman of the Pneumonia Control Committee of the York County Medical Society. He was a Fellow of the A. M. A.

○ **Albert E. Hager**, Taylor (Lackawanna County); Jefferson Medical College, 1895; aged 71; died at his home on Feb. 15. He was medical examiner for the Metropolitan Life Insurance Company for 27 years, and was former health officer of Taylor Borough. Dr. Hager is survived by his wife, one brother, and 3 sisters.

○ **Abram P. Seligman**, Mahanoy City; Jefferson Medical College of Philadelphia, 1892, and Hahnemann Medical College and Hospital of Philadelphia, 1894; aged 70; died on Jan. 22. He is survived by his wife, a daughter, and a son, James A. Seligman, M.D., of Overbrook, Philadelphia.

○ **George W. Hatfield**, Mt. Morris; University of Pittsburgh School of Medicine, 1887; aged 75; died on Jan. 29. Dr. Hatfield practiced medicine for 54 years. He was a member of the first graduating class of his alma mater. He is survived by his wife and one daughter.

Joseph M. Reeves, Spring Lake, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1876; aged 86; died Jan. 24. Dr. Reeves was a former member of the Philadelphia County Medical Society. He is survived by his wife, one daughter, and a son, Rufus S. Reeves, M.D., of Philadelphia.

○ **John Oenslager, Jr.**, Harrisburg; University of Pennsylvania School of Medicine, 1894; aged 72; died on Jan. 28. Dr. Oenslager was a past president of the Dauphin County Medical Society, also the Harrisburg Academy of Medicine. He was a Fellow of the A. M. A. He is survived by his wife, one daughter, and 2 sons.

○ **Hiram B. Russell**, Sheffield; Western Reserve University School of Medicine, 1890; aged 74; died at his home, Feb. 19, following 5 weeks' illness. He was a former president of the Warren County Medical Society, and had been engaged in the practice of medicine in Warren County for 44 of his 51 years of professional service. He is survived by his wife.

○ **Isadore Katz**, Philadelphia; Temple University School of Medicine, 1929; aged 35; died on Feb. 20, from an acute heart condition, while visiting at the home of a friend. He was first honor student in his graduating class at Temple University where he later became a lecturer. He had been a member of the staff of Mt. Sinai Hospital since 1930. He is survived by his parents and one son.

○ **Abram M. Miller**, Hyndman; Baltimore Medical College, 1905; aged 71; died suddenly, Mar. 4, from an acute heart condition. Dr. Miller had apparently been in the best of health and had visited patients earlier in the day. He practiced medicine in Hyndman for 38 years and prior to becoming a physician had been a practicing dentist. He is survived by his wife and 3 sons.

○ **Milton E. Hartman,** Allentown; Jefferson Medical College of Philadelphia, 1902; aged 63; died Nov. 27, 1940, of coronary disease. He practiced medicine for 31 years in Fleetwood, and the past 7 years in Allentown. Dr. Hartman is survived by his wife, a daughter, and 2 sons, Russell M. Hartman, M.D., of Fleetwood, and Earl B. Hartman, M.D., of Nazareth.

Frederick A. Rhodes, Culver City, Calif.; University of Pittsburgh School of Medicine, 1900; aged 67; died Dec. 29, 1940. Dr. Rhodes was professor of physiology at the University of Pittsburgh from 1905 to 1910. Removing to California in 1923, Dr. Rhodes transferred his membership from the Allegheny County Medical Society to the Los Angeles County Medical Society.

○ **Samuel A. Bonnaffon,** an affiliate member of Philadelphia County Medical Society, who was graduated from Jefferson Medical College in 1887 and from the University of Pennsylvania School of Medicine in 1888, aged 74, died Dec. 28, 1940, at his home in Wilmington, Del., where he had made his home for the past 20 years. He had retired from active practice as an industrial physician 5 years ago.

○ **Morris S. Shuman,** Philadelphia; Hahnemann Medical College of Philadelphia, 1938; aged 30; died on Feb. 12, in Eagleville Sanatorium, following a 5 weeks' illness. Dr. Shuman was a first lieutenant in the Medical Reserve Corps, U. S. Army, and his illness was disclosed by an army medical examination when he was called for service recently. He was a member of the staff of St. Luke's and Children's Hospital. He is survived by his parents.

○ **Edward L. Clemens,** Philadelphia; University of Pennsylvania School of Medicine, 1915; aged 54; died from an acute heart condition at his home on Mar. 1. He was a native of Tennessee and entered the private practice of medicine in Philadelphia after serving as a captain during the World War. He was on the staffs of Lankenau and Orthopedic Hospitals, Philadelphia, and consultant on the staff of the Allentown Hospital. He is survived by his wife.

○ **Nelson J. Burden,** Philadelphia; University of Pennsylvania School of Medicine, 1925; aged 39; died on Jan. 31, in St. Joseph's Hospital. Dr. Burden was former team physician for the University of Pennsylvania football squad and also served as head of the Student Health Service. He was a Fellow of the A. M. A. Surviving are his mother, his wife, a son and a daughter, and 3 brothers, 2 of whom are also Philadelphia physicians.

○ **Ross H. Thompson,** Philadelphia; Medico-Chirurgical College of Philadelphia, 1911; aged 55; died on Feb. 11, at Methodist Hospital, after a month's illness. Born in Tennessee, Dr. Thompson had lived in Philadelphia since early boyhood. He was associated as neurologist with Methodist, University, and Philadelphia General Hospitals, was a member of the American Neurological and American Psychiatric Societies, and was a Fellow of the A. M. A. He is survived by his parents and one brother.

○ **Benjamin P. Seltzer,** Philadelphia; University of Pennsylvania School of Medicine, 1924; aged 42; died on Feb. 16, at his home, after a brief illness. For the past 16 years Dr. Seltzer has been an inspector in the Division of Communicable Diseases in the Philadelphia Department of Health. He was a member of the staffs of Northeastern, Mt. Sinai, and St. Luke's and Children's Hospitals, and was a Fellow of the A. M. A. He is survived by his wife, a son and a daughter, 2 sisters, and 4 brothers.

○ **Sherman F. Gilpin,** Philadelphia; Jefferson Medical College, 1896; aged 70; died on Feb. 19, after an illness of 2 months, in Philadelphia General Hospital. Dr. Gilpin was recently elected president of the Ex-Residents Association of the Philadelphia General Hospital, where he was chief of the psychiatric wards for 15 years and one of the committing chiefs for the past 6 years. From 1908 to 1932 he was professor of neurology and psychiatry at Jefferson Medical College. He was a member of the American and the Philadelphia Psychiatric Associations, the American and the Philadelphia Neurological Associations, and a Fellow of the A. M. A. He is survived by his wife and one son, Sherman F. Gilpin, Jr., M.D., of Philadelphia.

○ **John J. Wickham,** Rochester; Medical College of Cincinnati, Ohio, 1885; aged 79; died Jan. 4. Dr. Wickham had given 56 years of medical service in this community and at the Tenth Councilor District meeting in Pittsburgh, July, 1940, he and 46 other western Pennsylvania physicians were awarded certificates of appreciation for their more than 50 years of service. Dr. Wickham was a founder of the Rochester General Hospital; a past president of the Beaver County Medical Society; a member of the United States Examining Board of Surgeons of Beaver County during President Cleveland's second administration; and president of the Board of Passavant Memorial Homes. In April, 1890, Dr. Wickham was married to Ella A. Blanchard, who died in September, 1939. Two daughters and 3 grandchildren survive.

Francis C. Benson, Jr., Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1894; aged 69; died on Feb. 18, following an illness of several months. Dr. Benson was a pioneer in the use of radium in the treatment of cancer and was professor of radiology at Hahnemann Medical College, from which he received the honorary degree of Doctor of Science in 1939. He was the author of several books on cancer; a Fellow of the American College of Surgeons and of the Pan-American Medical Association; and a member of the Sons of Veterans of the Civil War. In recent years he had devoted his entire time to Hahnemann Hospital. Prior to that he was consulting surgeon and radiologist to Women's Homeopathic and St. Luke's and Children's Hospitals in Philadelphia, and the State Hospital for the Insane in Allentown. He is survived by his wife, 2 sons, and a daughter.

○ **Ogden M. Edwards, Jr.,** Pittsburgh; Columbia University College of Physicians and Surgeons, New York, 1896; aged 71; died Dec. 28, 1940, after a long illness. Dr. Edwards was born in Pittsburgh, and was a graduate of Shadyside Academy and Princeton University. He served as intern at the Gouverneur Hospital in New York. Beginning practice in 1898, he specialized first in obstetrics and later in pediatrics. He was a member of the staff of Western Pennsylvania, St. Francis, and Children's Hospitals. During World

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War I, when staff members of the University of Pittsburgh School of Medicine were released to comprise and serve as Base Hospital No. 28 in France, Dr. Edwards assumed the deanship. He personally supplied the personal equipment for every medical officer in this group. He retired in 1920. Dr. Edwards leaves his wife, a son, and 3 daughters.

Francis Edward Stewart, Philadelphia; Jefferson Medical College of Philadelphia, 1879, aged 87; died on Feb. 20. Dr. Stewart was not only widely known as a physician and teacher but also as author of Stewart's *Compend of Pharmacy,* now in its tenth edition, and as an expert on the laws of patents and trademarks, particularly as they apply to medicine. He was a former professor of materia medica, botany, and physiology at the old Medico-Chirurgical College in Philadelphia, and held a professorship in the Philadelphia College of Pharmacy, which conferred on him an honorary degree of doctor of pharmacy in 1914. He was a Fellow of the American College of Physicians and a member of the Seaboard Medical Association, the American Therapeutic Association, and the American Academy of Medicine. He was former historian of the St. Andrews Society of Philadelphia and was honorary secretary of the Scottish-American War Memorial in Edinburgh. Two daughters survive him.

○ **Arthur B. Fleming**, Tamaqua; Medico-Chirurgical College of Philadelphia, 1902; aged 66; died Dec. 23, 1940, from coronary thrombosis. He was also a graduate of the Philadelphia College of Pharmacy. He served his internship in Ashland State Hospital. During World War I he served overseas as captain in the Medical Corps. Dr. Fleming was prominent and an indefatigable worker in the church and civic life of his town. He served for 14 years in the House of Delegates of The Medical Society of the State of Pennsylvania and was a member of the Committee on Public Health Legislation for 3 years, representing the Fourth Councilor District. He had served as president of the Schuylkill County Medical Society and as its secretary from 1922 until the time of his death, and due largely to his tact and unremitting efforts the society enjoys its present prestige and large membership. He was also a Fellow of the A. M. A. Secretary Fleming built his own monument in the organized medical profession of his county and state. He is survived by his wife.

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○ **Robert G. Torrey**, Philadelphia; University of Pennsylvania School of Medicine, 1906; aged 62; died Jan. 11 after a week's illness due to circulatory ailments. Dr. Torrey was professor of medicine at the Woman's Medical College, associate in medicine at the University of Pennsylvania Medical School, and medical examiner for the division of tuberculosis of the Philadelphia Health Department. He was also president of the medical board of the Philadelphia General Hospital. In 1904 and 1905 he captained the Penn football team and the one of 1904 under his leadership was rated one of the greatest in the university's history, going through a 12-game schedule undefeated and without being scored on except on a field goal by Swarthmore. In 1905 Dr. Torrey was selected by the late Walter Camp as center on his All-American team. He was a member of the American Rheumatism Association, the American Heart Association, and a Fellow of the A. M. A., the American College of Physicians, and the College of Physicians of Philadelphia. He also held a certificate from the American Board of Internal Medicine. He is survived by his wife and 2 sons.

Mrs. Rebecca V. Dick, of Darby, widow of H. Lenox H. Dick, M.D., died on Feb. 11.

Miscellaneous

The annual meeting of the Wainwright Tumor Association will be held on May 7 at the American Oncologic Hospital in Philadelphia under the leadership of George M. Dorrance, M.D., Philadelphia.

Francis J. Braceland, assistant professor of psychiatry at the University of Pennsylvania Graduate School of Medicine, has been appointed dean of Loyola University School of Medicine, Chicago.

With the January, 1941, issue of the *Stethoscope,* the official bulletin of the Erie County Medical Society, Ralph D. Bacon, M.D., retired as editor after 10 years of service. Dr. Bacon was succeeded by Delmar R. Palmer, M.D.

Herbert T. Kelly, M.D., of Philadelphia, presented a paper on "The Newer Concepts in the Treatment of Diabetes" before the members of the Cumberland County Medical Society at the Cumberland Hotel in Bridgeton, N. J., on Feb. 11.

The following Pennsylvania physicians read papers at the twelfth annual Southeastern Surgical Congress Postgraduate Assembly held in Richmond, Va., Mar. 10 to 12: William L. Estes, Jr., of Bethlehem, and Temple Fay and Gabriel Tucker, both of Philadelphia.

The one hundred and twentieth anniversary of the founding of the Philadelphia College of Pharmacy and Science was celebrated at the college, Feb. 24, with formal exercises at 11 a. m. An address was delivered by Dr. Henry Butler Allen, director of Franklin Institute, Philadelphia. President Wilmer Krusen presided.

The Section on Medical History of the College of Physicians of Philadelphia held a stated meeting on Feb. 14, at 8:30 p.m., at the College of Physicians, when Henry E. Sigerist, M.D., professor of the history of medicine at Johns Hopkins University, delivered an address on "The Social History of Public Health."

The University of Washington Alumni Association, Seattle, Wash., announced on Jan. 31 that

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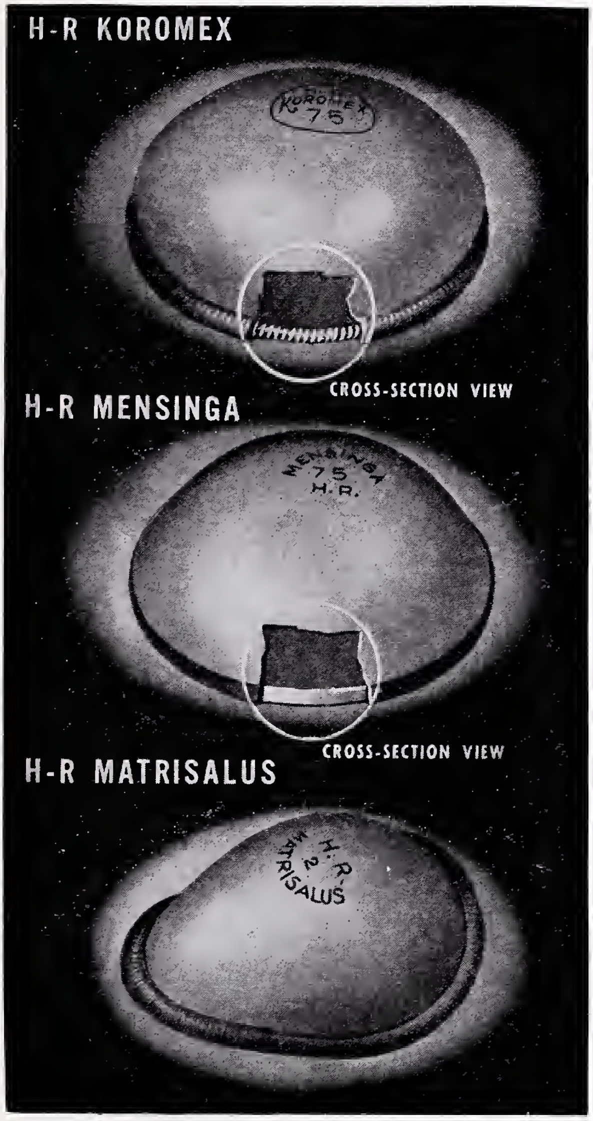

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Temple Fay, M.D., Philadelphia, had been selected as the outstanding alumnus of 1941. The degree of Alumnus Summa Laude, awarded 3 times previously, will be conferred upon Dr. Fay at the commencement exercises in June, 1941.

St. Mary's Hospital, Philadelphia, has been presented a 14-bed men's surgical ward in memory of Edward J. Murphy, M.D., by his associates at Sears Roebuck and Company, where Dr. Murphy was medical director. The ward, which was presented to the Sisters of St. Francis by F. Carter Schaub, general manager of the Roosevelt Boulevard plant, is now in use.

A joint meeting of the Neurologic and Psychiatric Societies of Philadelphia was held on Feb. 28, at 8:30 p. m., at the College of Physicians. Dr. Ross Armstrong McFarland, Fatigue Laboratories, Harvard University, presented "The Effects of Anoxemia on the Central Nervous System." The commentators were Carl F. Schmidt, M.D., professor of pharmacology, University of Pennsylvania (by invitation), Helena E. Riggs, M.D., and S. DeWitt Ludlum, M.D.

Members of the Hammond Pre-Medical Society of Temple University held their annual dinner on the evening of Mar. 7 at the Bellevue-Stratford Hotel, Philadelphia, in honor of Frank C. Hammond, M.D., dean emeritus of the Temple University Medical School. Speakers included Francis F. Borzell, M.D., president of The Medical Society of the State of Pennsylvania, and Wilmer Krusen, M.D., president of the Philadelphia College of Pharmacy and Science.

The accession of the largest privately owned collection of apothecaries' jars and mortars is announced by the Philadelphia College of Pharmacy and Science. The apothecary ware, assembled through several decades by the late Mr. David Costelo, class of 1879, professional prescription pharmacist and owner of the Neergaard Pharmacy of New York, was purchased by Mr. Josiah K. Lilly, chairman of the Board of Directors of Eli Lilly and Company, who was in the class of 1882, and has been presented by him to the college.

The medical department of the Philadelphia Alumni Association of the University of Pennsylvania held its annual mid-winter smoker and election of officers at the Penn Athletic Club, Philadelphia, Feb. 15, at 8:30 p. m. The new officers are: president, William Bates, M.D.; honorary president, Dr. Thomas S. Gates; first vice-president, William N. Bradley, M.D.; second vice-president, M. Valentine Miller, M.D.; third vice-president, James A. Babbitt, M.D.; treasurer, A. H. Boyer Drake, M.D.; corresponding secretary, Stephen E. Tracy, M.D.; recording secretary, Myer Solis-Cohen, M.D.

The Proctologic Society of the Graduate Hospital, University of Pennsylvania, held a meeting on Feb. 19, at 9 p. m., at the Hotel Barclay, Philadelphia. "Sphincter Conservation in Fistula Surgery" was presented by Louis J. Hirschman, M.D., professor of proctology, Wayne University College of Medicine, Detroit, Mich. Frank C. Yeomans, M.D., professor of proctology, Postgraduate School of Medicine, New York, and Descum C. McKenney, M.D., professor of proctology, University of Buffalo, were guest commentators.

The Pittsburgh Surgical Society held a regular meeting on Mar. 7 in the auditorium of Mellon Institute. The following program was presented: "Choice of Anesthesia in Surgery," by Philip A. Faix, M.D.; "Surgical Treatment of Lung Abscess and Chronic Bronchiectasis," by Harold A. Kipp, M.D.; "Recent Developments and Surgical Management of Diseases of the Biliary Tract," by Frank R. Bailey, M.D.; and "Problems in Plastic Surgery About the Face," by S. Milton Dupertuis, M.D., all of Pittsburgh.

During 1941 the Woman's Medical College of Pennsylvania is offering a lecture course in "Applied Medico-genetics." The lectures are given weekly on Friday from 5 to 6 p. m., and are open to physicians and medical students interested in the subject. Dr. Clyde E. Keeler, Fellow of the Wistar Institute, University of Pennsylvania; Dr. Charles B. Davenport, formerly director of the Station for Experimental Evolution and director of the Eugenics Record Office; Madge T. Macklin, M.D., assistant professor of anatomy, Western Ontario Medical School; and Dr. Frederich Osborn, president of the American Eugenics Society, are among the lecturers. This series of lectures is in continuation of a group presented last year, which were printed in book form under the title of "Medical Genetics and Eugenics." It is hoped that this year's symposium may also be published.

INTERNATIONAL COLLEGE OF SURGEONS TO MEET IN MEXICO CITY

The International College of Surgeons will hold its Fifth International Assembly in Mexico City, Aug. 10-14, 1941, in response to the invitation of the Mexican Government. With the assembly will be scientific exhibits of the latest advances in surgery and commercial demonstrations of the newest equipment.

Surgeons in the United States desiring information about the presentation of papers or scientific exhibits are requested to write to Desiderio Roman, M.D., chairman of the Scientific Committee, 250 South 17th Street, Philadelphia, Pa. Those seeking travel information are advised to communicate with Max Thorek, M.D., international executive secretary, 850 West Irving Park Boulevard, Chicago.

The international president of the college is Fred H. Albee, M.D., of New York City and Venice, Florida. Dr. Albee has been recently designated by Kappa Sigma, Greek letter college fraternity, as "The Man of the Year 1940." The award is in recognition of Dr. Albee's service for the past 22 years as chairman of the New Jersey Rehabilitation Commission, which he helped establish, and for his achievements in and numerous original articles on orthopedic surgery, especially bone grafting.

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BOOK REVIEWS

MILITARY MEDICAL MANUAL. Fourth edition, revised December, 1940. 864 pages. Harrisburg: Military Service Publishing Company, 1940. Price, $4.50.

Major General James C. Magee, the Surgeon General, U. S. Army, states in the foreword of this book that "Earlier editions of this book have been a great help to medical officers . . . The present issue may be accepted as a practical and reliable text concerning military medical matters." This fact alone makes the book well worth while.

The book is divided into 3 parts. The first part deals with general military subjects which helped the reviewer to refresh his military education. The second part is devoted to medical subjects and reviews the history, organization, and activities of the Medical Department. "Medical Tactics and Administration" is the title given to the third part. This subject is covered exceptionally well in its 10 chapters.

This book is especially recommended as a practical text on military medicine to those physicians who are entering active military service.

PHARMACOLOGY AND THERAPEUTICS. By ARTHUR R. CUSHNY, M.A., M.D., LL.D., F.R.S., late professor of materia medica and pharmacology in the University of Edinburgh. Thoroughly revised by C. W. EDMUNDS, A.B., M.D., professor of materia medica and therapeutics in the University of Michigan, Ann Arbor, Mich., and J. A. GUNN, M.D., D.Sc., F.R.C.P., professor of pharmacology in the University of Oxford, Oxford, England. Twelfth edition, published 1940. Octavo, 852 pages, illustrated with 66 engravings. Philadelphia: Lea & Febiger, 1940. Cloth, $6.50 net.

Cushny's first edition appeared in 1899 and ever since has been considered a standard book on pharmacology. His clear style and wonderful scope have made it a well-loved book by students and physicians.

Naturally a book of this nature must be revised and brought up to date. This has been done by Edmunds and Gunn. In this twelfth edition they have tried to include all of the worth-while agents of materia medica, toxicology, and serum treatment. They have also tried to keep the text as clear and interesting as the original.

Hormones, vitamins, and glandular extracts have been treated as pharmaceutical agents. Vaccines, toxins, etc., are also included. So, together with the drugs and applications, the book is a storehouse of knowledge for the student or the daily user of these therapeutic methods.

OBSTETRICS IN GENERAL PRACTICE. By J. P. GREENHILL, B.S., M.D., F.A.C.S., professor of obstetrics and gynecology, Loyola University Medical School, Chicago; professor of gynecology, Cook County Graduate School of Medicine; attending gynecologist, Cook County Hospital; co-editor of the *Year Book of Obstetrics & Gynecology*. Chicago: The Year Book Publishers, Inc., 1940. Price, $3.50.

In his effort to provide the general practitioner with a handy volume of essential obstetric knowledge, the author has admirably succeeded. Although similar books are plentiful on the bookdealers' shelves, this little handbook is unsurpassed.

The material is well arranged in a logical sequence, beginning with prenatal care, management of pregnancy, and abnormalities and complications of pregnancy. The second part of the book deals with labor, its management both in normal and abnormal cases. To aid the young practitioner starting out on his first case, there is a splendid chapter on what the physician's bag should contain to meet all requirements and detailed discussion as to the management of the home delivery.

The latter part of the book deals with a multitude of subjects such as "The Use of Pituitary Extract and Ergot," "Analgesia and Anesthesia," "Cesarean Section," "Care of the Newborn," "Circumcision," etc. There is one particularly helpful and interesting chapter which deals with roentgenography in obstetrics. It is well illustrated and points out the indications for and interpretation of the roentgen-ray plate in obstetrics.

A short but relatively up-to-date section on endocrinology is also included. The illustrations throughout the book are plentiful and extremely helpful, especially the figures in the chapter on the obstetric pelvis. These are by far the most illuminating demonstrations of pelvic measurements and types this reviewer has ever come across. The print is large and readable, the sentences are short and meaty, and all historic data and controversial points are omitted. Any general practitioner who wishes to add a short but practically all inclusive manual on obstetrics to his library will find it in this little book.

A HANDBOOK FOR DISSECTORS. By J. C. BOILEAU GRANT, professor of anatomy, University of Toronto, and H. A. CATES, associate professor of anatomy, University of Toronto. A William Wood book. Baltimore: The Williams & Wilkins Company, 1940. Price, $2.50.

This small volume is a companion of Grant's *A Method of Anatomy*. Its scope is complete. The 239 pages are clear and easily read and heavy type is used for the names of subjects when they occur for the first time. This book and the "Method" together constitute an excellent guide to the medical student's dissection. It is tied so closely to *A Method of Anatomy* by constant reference to its illustrations and its pages that it becomes inseparable from the larger volume. The reviewer wonders whether the 2 volumes might not be united in a single binding for expediency.

A METHOD OF ANATOMY. By J. C. BOILEAU GRANT, M.C., M.B., CH.B., F.R.C.S. (Edin.), professor of anatomy in the University of Toronto. Second edition. A William Wood book. Baltimore: The Williams and Wilkins Company, 1940. Price, $6.00.

Here is a system of anatomy that is a distinct departure from the customary rote-like collecting and memorizing of facts. It correlates facts and considers the body by regions. Emphasis is placed upon the predominant features of each region—be it a vessel, muscle, nerve, or bony landmark. All other factors in this region take their respective positions in proportion to their significance and importance.

The volume of 794 pages is printed 2 columns to a page, which make for easy reading. The type is clear and legible and the 651 line drawings are simple and accurate, each conveying a specific idea. Generally, the Birmingham revision of the BNA. terminology is used.

ABREAST OF MEDICAL PROGRESS

The editorial conferees are convinced from their preview of the contents of this issue of *The Pennsylvania Medical Journal* that its pages offer to the inquiring practitioner information and advice that will help to keep him abreast of many of the phases of successful practice even in these kaleidoscopic days marked by both therapeutic triumphs and patriotic responsibilities for the medical profession. Read the issue from cover to cover including our advertisers' pages and those of all contributors, reporters, and commentators, then forward to the *Journal* office your constructive criticisms and suggestions looking toward a *Journal* increasingly helpful to an increasing number of readers.

It is a volume designed to make anatomy rational and interesting. Having enjoyed 2 printings since 1937, this, the second edition of *A Method of Anatomy* is destined to become a permanent contribution to the texts on the subject. It is warmly recommended to any medical student, surgeon, or practitioner who has an occasional need for anatomic reference.

PRINCIPLES OF SURGICAL CARE. Shock and Other Problems. By Alfred Blalock, M.D., professor of surgery, Vanderbilt University School of Medicine, Nashville, Tenn. Illustrated. St. Louis: The C. V. Mosby Company, 1940. Price, $4.50.

This 300-page monograph is an extension and amplification of the Beaumont Lectures for 1940. Dr. Blalock outlines measures for the prevention of shock from the standpoint of practical application. Related problems, as dehydration, hypoproteinemia, acid-base disturbances, avitaminosis, pulmonary complications, anorexia, and distention, are discussed in detail.

Written clearly, the book is divided into 15 chapters, each dealing with a single feature of the composite condition we recognize as surgical shock. It is truly a scholarly and at the same time a practical treatise.

HEART FAILURE. By Arthur M. Fishberg, M.D., associate in medicine, Mount Sinai Hospital, New York City. Second edition, thoroughly revised. 829 pages. Illustrated with 25 engravings. Philadelphia: Lea & Febiger, 1940. Price, $8.50.

The second edition of this book is marked by changes in all the chapters. The book is written for the general practitioner, yet much of it is highly technical and a great deal of space is devoted to the determination of the cardiac output, velocity of blood flow, mechanical methods of determining venous pressure, and the circulating blood volume, all subjects beyond the reach of the bedside practitioner—yet all phases of heart failure are covered and the physicians can find suggestions for treatment of the numerous types and conditions of heart failure.

The method of handling the subject of digitalis serves well to illustrate the author's thoroughness. Many questions are answered as to the methods of digitalis action, what changes occur in the circulation in heart failure, the effect upon blood pressure, urine output, and the electrocardiogram. Preparation, methods of administration, and dosage are all carefully portrayed. We predict that the second edition will prove as popular as the first.

THE PRACTICE OF MEDICINE. By Jonathan Campbell Meakins, M.D., LL.D., professor of medicine and director of the Department of Medicine, McGill University; physician-in-chief, Royal Victoria Hospital, Montreal; formerly professor of therapeutics and clinical medicine, University of Edinburgh. Third edition, with 562 illustrations including 48 in color. St. Louis: The C. V. Mosby Company, 1940. Price, $10.00.

It is a great pleasure to review such an outstanding work on internal medicine because the volume presents so many features which make it interesting and successful.

The practice of the healing art is approached from the viewpoint of the general practitioner, and emphasis is placed on the art of medicine as well as the scientific phase, which is rather rare.

The work shows the value of the writing by a single practitioner of wide clinical experience and the text will appeal to both those young in practice and those who have had many years of experience in clinical work, often without the aid of many of the scientific devices which are available in hospitals and larger communities.

The general arrangement of the subjects is commendable, and there is very little or no overlapping in the text. The illustrations are well placed and are a great aid in understanding the text.

The size of the print and the slight coloring of the paper make the book very easy to read.

Altogether this work is to be highly commended and recommended for real scientific and clinical study by all students of medicine.

CONGENITAL SYPHILIS. By Charles C. Dennie, B.S., M.D., professor of dermatology, University of Kansas Medical School, Kansas City, Kan., chief of the Department of Dermatology and Syphilology of Bell Memorial Hospital, Kansas City, Kan., General Hospital and Children's Mercy Hospital, Kansas City, Mo.; and Sidney F. Pakula, B.S., M.D., visiting pediatrician to Children's Mercy Hospital, Kansas City General Hospital, Alfred Benjamin Clinic, and Menorah Hospital, Kansas City, Mo. Octavo, 596 pages, illustrated with 133 engravings. Philadelphia: Lea and Febiger, 1940. Cloth, $8.00 net.

With the problem of syphilis control becoming increasingly prominent in the field of public health, a volume such as this is a welcome addition to library

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shelves. The book serves as a good reference source for anyone interested in the subject of congenital syphilis.

All phases and manifestations of congenital syphilis are discussed and diagnostic procedures are well covered. There are numerous case and family histories, also the interesting controversy regarding syphilis transmission to the third generation. The point remains unproven.

The section on treatment is adequate, most of the material dealing with the use of the various antisyphilitic preparations in children. Fever therapy and malarial treatment are well discussed and many valuable recommendations are made for their use. The last chapter takes up the differential diagnosis of congenital and acquired syphilis in the young—a most difficult procedure.

Although the authors have written most of the text, a few chapters have been contributed or collaborated on by other writers.

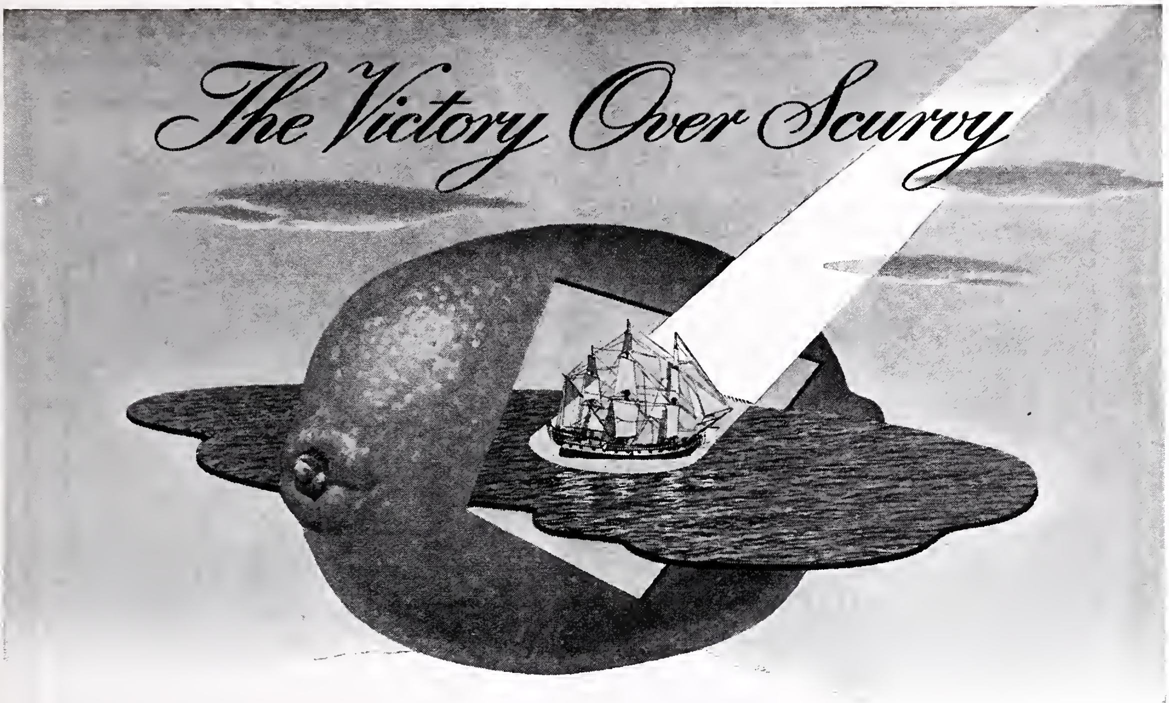
The book is recommended to syphilologists and dermatologists and should be of interest to all physicians who encounter the many problems of congenital syphilis in their practice.

BETTER NAME WANTED

The person who boasts that he has never been sick in his life will frequently admit under further questioning that he has had a "bad cold" now and then but that he did not count that because he thought it of little importance. It was common and to him had no identity as a specific disease. It is strangely contradictory, this expression, and yet of fairly common usage. Most persons speak of the common cold as a "bad cold." The physician chuckles and says, "I never heard of a good one; how bad was it?" He can only judge its importance by further questioning. Was there any disability? Was he confined to his home? Did he have to stay in bed, and what were his symptoms?

The term "common cold" is also unsatisfactory. The adjective is all right because it bespeaks its frequency, but the word "cold" has no definite meaning here. By common usage, it signifies an inflammation of the mucous membrane of the nose and throat following exposure; hence rhinopharyngitis would seem to be appropriate. It is not quite as simple as that, however, because of the mucous membrane extensions and the systemic absorptions that are so frequently a part of it. One may argue that these are superimposed upon the common cold, but the patient does not recognize such fine distinctions. If he attempts to be more specific, he may divide them into head colds and chest colds, but beyond that he cannot go.

The physician himself is often content to give a cold the high-sounding but all-inclusive name of upper respiratory infection. This suggests an element of hedging, but even then it recognizes the latitude that must be allowed in these cases and is probably the best we can do for the present. In the lay mind, a common cold covers a lot of territory. People ask quite naturally why physicians have not been able to find a cure for a condition that is so common. Well, we can only say that its prevalence does not make it more curable. When we find a specific, it will no longer be common. In the meantime we must put these patients to bed and recognize the potential danger of colds.—*The Journal-Lancet.*



SCURVY first attracted attention when men began to make long sea voyages. The 16th century explorer, Jacques Cartier, described it and told how it was cured by having his men drink an infusion of the leaves and bark of the Ameda tree. Nevertheless it remained a serious problem in the British Navy until the middle of the 18th century when James Lind wrote his *Treatise on Scurvy.* Through Lind's observations and influence it was virtually eliminated as a plague among British sailors by providing them with lemons or other citrus fruit.

A forward step was made in 1907 by Holst and Frölich who found that the guinea pig could be used experimentally for the study of scurvy. It was not until 1932, however, that the isolation of hexuronic (ascorbic) acid was announced almost simultaneously by Waugh and King in the United States and by Svirbely and Szent-Györgyi in Hungary. First obtained from the adrenal cortex of animals and from cabbage leaves, it has since been found widely in plant and animal tissues.

The story of the conquest of scurvy presents a dramatic page in medical history, yet it may be but a prelude to a still more fascinating and significant drama. The isolation of ascorbic acid opens the door a little further for investigators studying the physiology and metabolism of the living cell.

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Committee on Conservation of Vision: Thomas R. Gagion, 23 Broad St., Pittston.

Committee on Medical Economics: Kenneth S. Scott, West Chester.

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Committee on Archives: Walter F. Donaldson, 8104 Jenkins Arcade, Pittsburgh.

Commission on Cancer: Stanley P. Reimann, 703 W. Phil-Ellena St., Philadelphia.

Committee on Nutrition: Herbert T. Kelley, 1900 Spruce St., Philadelphia.

Committee on Workmen's Compensation Laws: Augustus S. Kech, 1221 Twelfth Ave., Altoona.

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Commission on Maternal Welfare: James S. Taylor, 1204 Fourteenth Ave., Altoona.

Committee on Physical Therapy: William H. Schmidt, 136 S. 16th St., Philadelphia.

Commission for the Study of Pneumonia Control: Edward L. Bortz, 2021 Girard Ave., Philadelphia.

Commission on the Control of Syphilis and Venereal Diseases: Samuel L. Grossman, 115 State St., Harrisburg.

Committee on Tuberculosis: C. Howard Marcy, 2851 Bedford Ave., Pittsburgh.

Committee on Deafness Prevention and Amelioration: Douglas Macfarlan, 1805 Chestnut St., Philadelphia.

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Commission on Acute Appendicitis Mortality: John O. Bower, 2008 Walnut St., Philadelphia.

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Committee on Industrial Health: Charles-Francis Long, 1836 Delancey St., Philadelphia.

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LETTERS

Bundles for Britain

GENTLEMEN:

As much as we individually might be in sympathy with the "Bundles for Britain" movement, one recent phase of it hardly has our approval.

At several points in the country there has been a movement to collect the samples left by pharmaceutical detail men in physicians' offices and include them in the shipments for British Relief. This is an expensive and uncontrolled way of supplying pharmaceutical products.

Most of the pharmaceutical manufacturers have individually donated supplies, including vitamin capsules and other needed pharmaceutical products to the British Relief at no charge.

The packaging of a sample increases the cost and if these samples are collected and sent to Britain, then the purpose for which they were intended, that is, for the use of physicians, is not accomplished, and the heterogeneous material that reaches British Relief probably would have little value. Many samples left to physicians would be dangerous if used indiscriminately without the advice of a physician.

In some cases individual city and county medical societies have been asked to co-operate with the collection of these samples. It is our opinion that such co-operation should be refused for the obvious reasons stated.

H. L. SANDBERG, *Director,*
Co-operative Medical Advertising Bureau,
American Medical Association.

Progress Reported

GENTLEMEN:

The Doctors' Symphony, composed of physicians and dentists, is already well organized and has been rehearsing every Thursday evening at 9:30 in the Schenley High School, Pittsburgh, Pa.

We have been having an excellent turn-out and a fine representation of orchestral instrumentation.

Any interested physician in the Pittsburgh area is requested to get in touch with Dr. Gaylord Yost, Pittsburgh Musical Institute, our conductor, or with the writer of this letter.

MEYER W. RUBENSTEIN, M.D.,
Medical Arts Building,
Pittsburgh, Pa.

State Laboratory Examinations Restricted

GENTLEMEN:

Due to the rapidly increasing number of specimens being sent to the laboratories of the Pennsylvania Department of Health for examinations that are of direct public health importance in the control of communicable diseases, it is necessary to discontinue the examination of the following specimens, the results of which are only of clinical significance: routine urine specimens for albumin and sugar, etc., routine differential counts of blood smears, blood chemistry examinations, gastric contents, feces for occult blood, bile, etc., and routine tissue specimens—ovaries, tubes, appendices, tonsils, and autopsy specimens.

Tumor specimens, where malignancy is suspected, should be sent to hospital pathologic laboratories that are now paid a fee for such examinations and records of the cases by the department's Division of Cancer Control. If local pathologic laboratory service is not available, these specimens with a complete clinical record of the case may be sent directly to the Cancer Control Division.

These instructions will become effective as of June 1, 1941.

JOHN J. SHAW, M.D., *Secretary,*
Pennsylvania Department of Health.

Licensure Examinations

GENTLEMEN:

The Board of Medical Education and Licensure wishes to announce that examinations for licensure in medicine and surgery will be given on July 8 to 12, 1941. Written examinations will be given on July 8, 9, and 10, and the bedside examinations on July 11 and 12.

The examinations will be given at the Philadelphia College of Pharmacy and Science, 43rd Street and Woodland Avenue, Philadelphia, and at the Cathedral of Learning, 14th floor, University of Pittsburgh, Pittsburgh, Pa.

I. D. METZGER, M.D., *Chairman,*
Board of Medical Education and Licensure.

Change in Meeting Date

GENTLEMEN:

We would appreciate it if you would announce in your JOURNAL the time and place of the meeting of the American Association for the Study of Goiter. This meeting will be held in the Hotel Statler, Boston, Mass., May 12, 13, and 14, 1941, instead of the dates originally announced.

The program for the 3-day meeting will consist of papers dealing with goiter and other diseases of the thyroid gland, dry clinics, and demonstrations.

W. BLAIR MOSSER, M.D., *Corresponding Secretary,*
Kane, Pa.

Confident of growing appreciation of their instructional value, the editorial conferees call attention to many county medical society program reports appearing monthly in the *Journal.* Every effort is being directed to loading such reports with nothing but readily absorbed aids to early diagnosis and prompt and adequate treatment. Prepared principally by the specialist, they are dedicated largely to the physician who sees the patient first. As usual, constructive comments are invited from interested readers.

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State Department of Public Assistance Medical Service

LEWIS T. BUCKMAN, M.D.
Wilkes-Barre, Pa.

UNFORTUNATELY, one of the pressing problems facing the profession today is that concerned with rendering medical service to the indigent. At one time the unemployed were fed, housed, and cared for by more fortunate relatives who were employed, or they sought local charity, i. e., "went on the town." The local unit then charged with the trusteeship of tax funds raised for the purpose of alleviating the distress of the poor was called in this state the poor board. For medical service the poor had access to free service where they could find it, or service at the hands of physicians employed by the poor boards. Some of these physicians were paid on a fee-for-service basis, and the work was distributed among all the physicians of the community or the political unit in which that particular poor board functioned. Other boards employed physicians on a yearly salary basis, and for medical care in such a political unit the poor consulted that particular poor board physician.

The medical profession had some cause for complaint against this latter form of contract practice in communities where it was established, and consequently with the institution of the State Emergency Relief Board in 1933 there was considerable satisfaction among the physicians that now there would be recognized by a state authority the principle of free choice of physician and fee-for-service payment to all who might render needed service. The SERB ended in September, 1936.

The matter of service to the clients of the various poor boards was not entirely settled by SERB and here and there, following SERB, agreements were entered into with poor boards to permit choice of physician and fee for service. With the passage of the Public Assistance Act by the special legislature meeting at the end of 1937, there came into existence the institution districts and the abolishing of the poor boards.

The furnishing of medical service under the DPA was inaugurated in the autumn of 1938 and has continued to this time apparently with an occasional dispute arising and some mistrust on both sides developing.

There should be no dispute and no mistrust, and with the experience of time and a little polishing off where rough corners grate, there should evolve a system for caring for the medical needs of the poor that will be acceptable to both the state and the medical profession, which are the two parties at interest in this matter.

The poor being what they are, there is apt to be much of the chronic type of illness among them. Such chronic disabling illness might have been the cause of the unemployment and the retrograde progress on the social and economic scale. Or the inability to obtain and supply for their families the ordinary necessities of adequate diet, proper housing, or means to cleanliness might have been the source of illness. In still other instances, part of this population were born to the life; lack of ambition, incentive, or example, led to ignorance, indifference, and weakness, and among some of these the rather arrogant expectation that the world owes them a living induces them to expect and demand all kinds of service including medical, and then more times than not when medical attention is not needed.

However that may be, when the federal government assumed the care of the poor through local units under SERB, they contracted with the medical profession to pay fees for service where the illness was acute, and for necessary attention in chronic illnesses. The machinery was cumbersome; authorizations had to be obtained, the number of visits in any one illness was limited, and inadequate funds led to the inevitable prorating. And we must admit that on the medical side there were abuses, and that gradually the profession had to clear its own house of chiselers.

The inauguration of DPA promised a system with reasonable basis for satisfaction. The poor on relief were to have good general practitioner care on a minimum basis. They were to be allowed to select their own physician, seek med-

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Read before the Lycoming County Medical Society, Mar. 14, 1941.

ical attention when they felt they needed it without the intervention of an authorizing officer, could have as much attention as the physician honestly thought necessary, and nobody to question them. They were still to be encouraged to use free clinics and free hospital wards for special examinations and studies, and for surgery.

The second party at interest, the physician, co-operated by a 50 per cent contribution at the start. He cut his office fees and his home-call fees. He gave the attention he thought necessary on a minimum basis. He was obliged to keep records, make out more papers than usual for his own account, and fill requisitions on the druggist in addition to a second prescription for narcotics; but he was to have local home supervision by a committee of physicians from his own county, and as far as medical service went, he was to have control only by his own confreres. The payment of bills he left to the state acting as guardian of the wards of the state among the poor, and he entered into an agreement with the representatives of the state to carry out a contract on this basis.

The third party at interest was the state, acting through its representatives who are the employees of the people, the trustees of the tax funds raised by levies on all classes, rich and poor alike, whether they be excess profits tax, a tax on a bottle of liquor, or a few cents on a "movie" ticket or a package of cigarettes. The state, being the people, simply says: "I will take care of my wards who cannot take care of themselves. If they are out of work, cannot find work, will not work, or are unemployable, I still will care for them. To do this I will tax myself and raise money for the jack pot. I will employ people who are skilled in administering public funds and public trusts, who have made a specialty of studying people and economics and human relations, as opposed to business and law and illness and injury, and I will expect them to respect my wishes and look out for my funds, and see that the physicians are paid for administering to those who are ill and injured, who, although they are poor, still are human beings and resident within my political boundaries."

These were the principles on which this system was established, and if there is any fault in the system, the fault must be with the principles, or the administration, or the means of administering the desires of the people.

If we accept the principles to be right, and the system is unsatisfactory, then we must look to the execution of the plan for reasons of dissatisfaction.

It would seem that the principles are right, and we must accept that fact before we can discuss the reasons for dissatisfaction with a system or the reasons for ultimate failure. The principle that the people are entitled to care has been established by every vocalizer in every political unit of this country today. The question has never been whether the recipient of a dole or relief is worthy of help; the fact remains that if need is shown, relief is allowed. This has now been established and will be a principle in government throughout our lives and the lives of generations yet to follow. Every child yet to be born for generations to come will be born to a life of usefulness and tax-paying, or to a life of constant or intermittent acceptance of a dole. Changes in economic stability of the nation, of states, of counties, cities, and townships, and of industries, corporations, small businesses, and individuals, will vary from time to time, but people will not change for a long time to come. Some will be able to make their own way whatever comes, but there will always be a proportion who need help.

This is a principle we must accept, and if we do, we know that on the basis of it we must prepare to furnish medical care to this small proportion of unfortunates, just as we must feed and clothe them.

If this is so, the question to be decided is, "How shall we do it?" In 1938 we embarked on the method now practiced under DPA, and if we have found in 3 years that it is unsatisfactory, the thing to do is to change the methods, not wrangle over principles.

In questioning the methods, there are only two avenues of approach: One is through one contracting party, the state; the other is through the other contracting party, the medical profession. The state is represented by a class of professional persons called social workers. The medical profession is represented by a class of professional persons called physicians. The latter is the older established class. The social worker is a newcomer, a member of a relatively young profession. The physician is an individualist inclined to mind his own business, going about his daily routine of aiding the sick in his own way as he has learned by instruction and experience, suffering within himself the knowledge of his own mistakes and shortcomings, growing stronger by the rebuffs of fortune and economic change, and by the competition of his fellows and the criticism of those outside the profession. The social worker, dealing with economic ills and human relationships, is inclined to theories that sometimes attain magnificent scales. He deals with large groups and movements and trends; he works with other people's money and suffers little responsibility for failures and mistakes. The physician cannot always administer other treatment when failure attends one plan of therapy; the social worker can always take up a new experiment to work on the body politic.

Both professions are economic parasites; neither produces tangible goods.

Now then, what fault has the medical profession contributed to the failure of this system? Such fault might be refusal to render service, inadequate service, dishonest service, excessive service, dishonest charges, excessive charges. The refusal to render service occurs at the hands of only a small proportion of the profession. In Luzerne County we have 330 participating physicians out of a membership of 365 in the county society, and perhaps a medical population of 450. If we write off retired physicians, the class represented by surgeon-specialists who would experience no call to work in the program, roentgenologists and other laboratory workers, those who render service but do not render invoices, etc., it leaves a figure of 330 standing as a pretty fair proportion of all the physicians as participants.

Inadequate service would depend for proof on the claim of disgruntled patients. We have heard none.

Dishonest service, excessive service, dishonest charges, and excessive charges may be considered as one, and this is the only category on which the medical profession can be criticized in this program. These faults are controlled by the local committees themselves. We have had instances where offenders have been discovered and punished. By and large, the invoices for a month average only a few to each physician and only a few dollars to each invoice. There are communities which have been hard hit in the past 8 years, and in these communities are many fine, reputable, well-established older practitioners who cannot or will not move away, and are obliged to carry a big load in this program. Such a physician may honestly each month present many invoices totaling hundreds of dollars. He should not be criticized for this, and above all he should not be penalized more than the necessary proration that all have suffered. He should be allowed to go his way and be encouraged, and if the local committee is satisfied that the work was demanded by the patient and was rendered by the physician, no third party should step in nor should arbitrary scaling of his totals be applied before the proration is practiced.

I cannot see where the medical profession has contributed to the failure of the system, if failure has occurred or is developing.

The other contracting party is the state, represented by social workers and clerks who are employed by the party in power to administer the law. The party in power, by whatever name it passes, must recognize as a precept of democratic government that its power represents an obligation and trust. As such, the party is simply the instrument of the people, and the office holders and appointees are simply the servants.

How have they administered this trust? By their own admission they have hitherto failed consistently to furnish enough money to administer the program. Because there was not enough money, what there was had to be distributed on a percentage basis, and so we have had proration of bills—the first breach of contract. Try as I will, I cannot see any other criticism that can be leveled at the department, and when we consider that the department is simply administering funds given them by someone else, I cannot see why we should criticize them, for even that.

As far as I know, they have not offended by interfering with local censorship by our own county healing arts committees. Also, as far as I know, they have not issued orders from Harrisburg to remove any participating physician, and if they did, they would do it through review of the county committee. Scaling bills to an arbitrary maximum in Harrisburg is not done. However, granting 50 cents per client to hospital dispensaries is an offense to good feeling in the profession. The hospitals already receive state appropriations and maintain free dispensaries in order to be able to qualify for such appropriations. To pay them again 50 cents per client is to pay twice for the same service and to penalize other members of the healing arts. It is subservience to a pressure group.

Paying druggists both a professional fee and a trade allowance is not fair to other members of the healing arts. The reason stated is that the druggist has a fixed investment in store fixtures and stock. So does the dentist, so does the physician. We are not herb doctors going from town to town shouting our wares from the back of a truck or a spring wagon. The druggist has to have his store and fixtures and stock anyhow; why pay him a premium for it and, further than that, absolve him from proration?

If the sums did not even match the deficit, to remove this payment to dispensaries already paid by the state, and to remove this double payment to the druggist would do much to engender a better co-operative spirit among the physicians.

A suspicion rears its ugly head at times that the social workers administering the law have an ulterior motive in stirring unrest among the physicians. When I use the term "social worker," I use it in the sense of a title. We speak frankly of druggists, dentists, nurses, and physicians. Why should we not speak of social workers? And when I speak of the "state," I speak not just of Pennsylvania. It has been said that the department administering relief in Harrisburg would like to administer its medical program through the medium of contract physicians, and not through the present system of individual private practitioners. To most of us it would make little practical difference. As I have pointed out, the average number of invoices and the average total charge per invoice is small. This type of practice is of little practical importance to the economic life of most of our physicians, but it makes a most profound and important difference to us whether we shall be allowed unhampered to administer our practice as we see fit and as our people in our neighborhood want it, or whether we shall have state clinics with hired hands established in our midst to do this work.

We do not yet know how the famous lawsuit will be decided in Washington, but recent press dispatches reported directed verdicts of not guilty in the cases of 4 of the defendants. Anyone who has followed the transcript of the testimony can see that a fair trial is being had, and that the court is insisting on the trial of an indictment, not a trial of personages, or philosophies, or economic concepts.

To become excited now about DPA produces an unfortunate situation. It is becoming less and less important as the nation is turning from its own economic ills to the greater humanitarian interests of a world embattled over a clash of governmental philosophies. The increased appropriation per client which went into effect on Mar. 1, to extend over 6 trial months, will answer the question if the medical profession simply continues its past program of adequate care on a minimal basis. If we keep our heads and follow honestly the program we have followed in the past, invoices will be paid more nearly on the basis on which the state first entered its contract. It is my belief that the profession will do just this, that invoices will not increase, that even greater supervision will be practiced at home, and greater peace and satisfaction descend on the profession, until the period of inevitable readjustment occurs with the cessation of world hostilities or the exhaustion of nations. Then will the social worker again be busy with trends and new philosophies, and new problems of human relationships will inevitably arise.

STATE MEDICINE

The press announced last month that the Health Ministry of New Zealand had started, as of Mar. 1, with national free medical care. The doctors of New Zealand will receive $3.50 for each patient per year and mileage will be allowed for trips in the country of over 20 miles. The doctors must supply drugs, although they are allowed to charge the patient for these if they are able to collect the monies they must advance! The press accounts state that even unsuccessful doctors will be able to make about as much as $700 a year.

Just imagine the incentive a doctor will have for years of hard work, of study, of expenditure of a large amount of capital in order to obtain the princely sum of $700 a year. Think of the amount of work that would be necessary in order to obtain this munificent salary. At least and probably a good many more than 200 patients must be taken care of during the year because this sum is not clear, but must be used in part for necessary expenses. In all likelihood 2000 forms must be filled out for these 200 patients.

Just think of the type of service that will be rendered to a patient by a man who is expected to make his living from the returns from the care of the state-paid-for patients; even to make a living wage he will have to take care of an untold number of patients. He will not be able to give them the time for adequate study nor will he be able to devote any time to improving his knowledge of medicine. The physician's entire day will be spent in giving a service which necessarily will have to be inadequate and incompetent. The minimum wage distinctly has a tendency to promote incompetency.

Just think of how many bureaucratic officials will live on the doctor. A host of administrators, accountants, clerks, and what not must be supported by the efforts of the physician.

Just think of the New Zealand medical care plan and then stop and think of the condition that the physician would be in in this country were he placed in the category of an employee of the state, the obeyer of the demands of some one or many who know nothing about the endless difficulties and the often insurmountable problems of the care of the sick man.—Editorial, *New Orleans Medical and Surgical Journal.*

* * *

The control of tuberculosis in the army must be given serious thought. Elimination of the potentially tuberculous recruit by roentgen-ray examination at the time of induction into the army is not enough. Continued systematic prevention of tuberculosis in the army is the real task to be faced.—Edgar Mayer, M.D., *Modern Medicine,* December, 1940.

CONTINUOUS SPINAL ANESTHESIA

With Observations on the First 500 Cases

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Philadelphia, Pa.

WE GAVE the first continuous spinal anesthesia to a patient on Apr. 10, 1939. Since that date we have administered more than 500 spinal anesthesias by this method. We are pleased with the method and are recording some of our observations. Sise says that the first 30 minutes of spinal anesthesia are the most dangerous minutes. It is during this period that fatalities and complications are most likely to occur, and especially is this true when a single large dose of a toxic drug is administered.

We have developed a method of spinal anesthesia in which we give just sufficient dosage of the least toxic of all drugs (novocain, neocaine, procaine hydrochloride) to produce anesthesia to the desired level and degree. This anesthesia is maintained as long as desired by adding subsequent small doses as they are needed. We have thereby changed the method of spinal anesthesia from the "one dose" to the "fractional dose" technic. Other anesthesias are administered by the continuous or fractional dose method (intravenous anesthesia, ether, cyclopropane, etc.)

Safety and *controllability* are the two things that we desire most in spinal anesthesia. We believe that by giving much smaller initial doses of the drug it should increase the safety. By leaving the needle in the subarachnoid space the drug can be rapidly recovered by withdrawing cerebrospinal fluid (5 to 10 c.c.) if untoward toxic symptoms develop (some patients are very sensitive to drugs). The toxic symptoms obtained after injection of a drug into the subarachnoid space are not due to the drug that is fixed in the lipoid elements of the sensory and motor synapses producing anesthesia, but are due to the drug being absorbed from the cerebrospinal fluid into the systemic (venous) circulation. The respiratory center is the most vulnerable seat of attack. When and if toxic symptoms of an alarming character develop, the first thing to do is to withdraw rapidly the cerebrospinal fluid containing the drug. The greatest concentration of the drug is at the point of the needle. The nerves promptly recover from the anesthesia. This observation was first made accidentally, and has been confirmed many times subsequently. Spinal anesthesia is maintained by the drug that is present in the cerebrospinal fluid, and when the concentration of this drug falls below a definite level the anesthesia promptly wears off. After anesthesia is established it takes relatively small doses to maintain the anesthesia for any desired length of time. If we are doing serious technical operative procedures and it is important to maintain complete relaxation at all times, we give an additional dose of 50 mg. of novocain (5 per cent) solution at the expiration of every 30 minutes. Otherwise, we wait for the previous dose to wear off before we give a subsequent injection.

In every instance anesthesia was produced to the desired level and degree, and in each case the operation was completed under spinal anesthesia. There were no supplementary anesthetics needed. There were no anesthetic deaths, and no neurologic complications. Toxic symptoms were promptly controlled by withdrawal of the drug by rapid aspiration of spinal fluid (3 to 10 c.c.) and by giving oxygen inhalations. The advantages of spinal anesthesia are well known to surgeons and anesthetists experienced in its use. Some of the disadvantages of the single dose method are: (1) toxic symptoms or even sudden death following the administration intraspinally of a large dose of a toxic drug; (2) failure of the drug to "take" or produce anesthesia to the desired level and degree; and (3) the action of the drug wearing off before the operation is completed. In this series of cases we have removed these disadvantages by using this new method of spinal anesthesia.

There seems to be no doubt that procaine

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hydrochloride (novocain or neocaine) is the least toxic, both clinically and experimentally, of all drugs used to produce spinal anesthesia. Its action is also of the shortest duration. When we use drugs of more prolonged action in producing spinal anesthesia, we also find them to be more toxic. We see no reason why any drug or combination of drugs that are used to produce spinal anesthesia cannot be used by the "fractional dose" or continuous method. It should be safer to use them by this method than by the single dose technic for two reasons. First, the patient is exposed to smaller amounts of the drug by the fractional dose method; and second, the drug may be removed very rapidly by the withdrawal or aspiration of sufficient amounts of spinal fluid which contains the drug should alarming toxic symptoms develop.

Novocain produces anesthesia promptly when introduced into the subarachnoid space in sufficient quantity. We have found that it takes approximately 90 seconds to relieve pain completely and produce muscular relaxation when it is given in subsequent injections. We have observed cases in which the anesthetic action of novocain disappeared every 15 minutes while using doses of 100 mg. each. We have had 100 mg. of novocain last for 1 hour and 45 minutes when injected into the subarachnoid space. The average duration of the spinal anesthesia for 100 to 150 mg. of novocain as the initial injection is approximately 40 minutes. Subsequent injections of 50 mg. each last approximately 30 minutes, producing both motor relaxation and sensory block. By injecting small doses of novocain (25 mg.) into the subarachnoid space we have been able to produce sensory block (anesthesia) without a motor block (muscular relaxation). We believe that by using this method of anesthesia it is possible to lower the morbidity and mortality rates, especially in serious surgical procedures.

Equipment

Description of Fig. 1.

1. Head end of pad used in continuous spinal anesthesia.
   a. Break in pad for detachment when doing perineal operations.
   b. Break in pad for bending at knees when in Trendelenburg position (as suggested by Morris J. Nicholson of the Lahey Clinic).
   c. Position of malleable needle left in patient's subarachnoid space when patient is lying on back.
   d. Thirty inches of very small caliber thick-walled rubber tubing connecting 10 c.c. Luer-lok syringe to malleable needle in patient's spine.
2. Close-up of syringe, stopcock, rubber tubing, and needle.
   a. Stopcock connecting Luer-lok 10 c.c. syringe and rubber tubing.

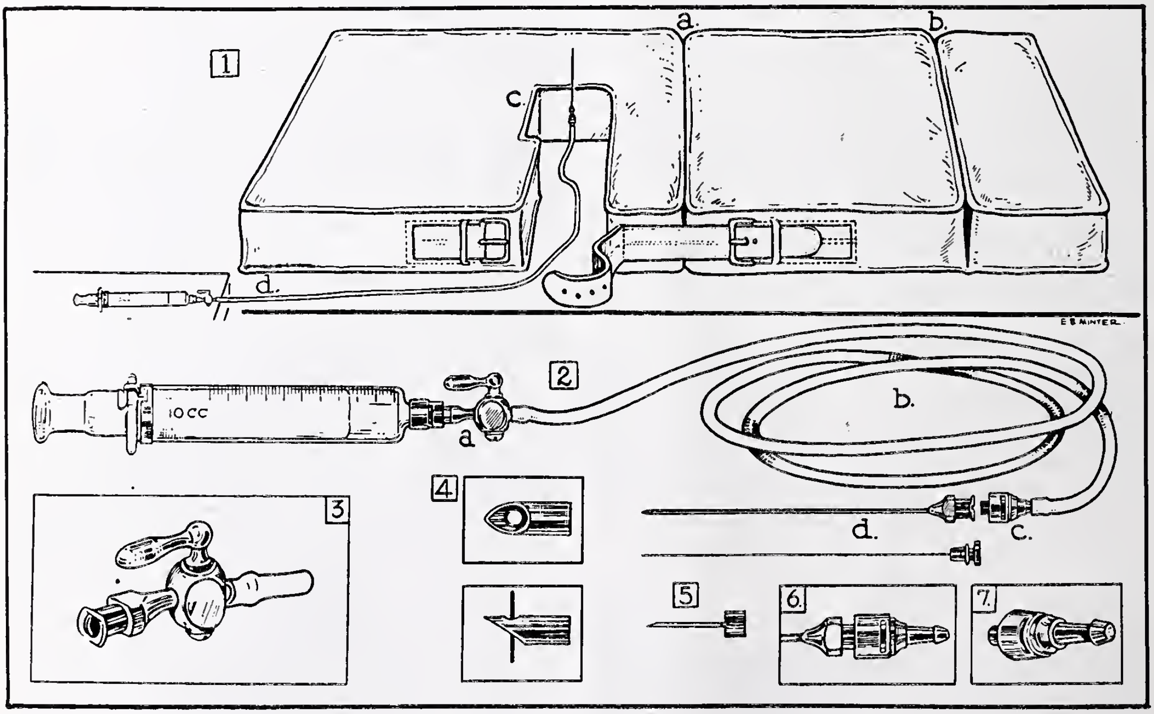

Fig. 1

   b. Rubber tubing (30 inches).
   c. Luer-lok connecting rubber tubing and malleable needle.
   d. Malleable needle.
3. Close-up of stopcock.
4. Shows a short bevel with counter opening in the bevel of the malleable needle. This counter opening prevents blockage of the bevel by the meninges, and insures a free flow of spinal fluid.
5. Needle introducer or needle guide used in puncturing the skin.
6. Luer-lok plug connected to spinal needle to prevent loss of cerebrospinal fluid.
7. Luer-lok plug.

Technic

In continuous spinal anesthesia we employ a short-acting agent, procaine hydrochloride (novocain), which is injected in fractional doses as needed during operation. The patient is placed on a specially designed mattress, and a very flexible, German silver, lumbar puncture needle remains in place in the subarachnoid space. This needle is connected to a syringe by means of a 30-inch piece of rubber tubing which is provided with Luer-lok connections at either end.

The rubber-covered mattress is 5 inches thick, 18 inches wide, and 6 feet long (Fig. 1, 1). It has a cut-out part 7 inches in length that comes under the lumbar spine when the patient is supine. There is a break in the center of the mattress so that the part which supports the lower extremities may be detached for perineal operations. Provision has also been made to break the lower part of the mattress to allow the feet to be dropped when a deep Trendelenburg position is desired (Fig. 1, 1b). If an abdominal operation follows the perineal operation, the patient may be pulled back into position and the lower half of the mattress replaced and made secure with straps and buckles (Fig. 1, 1a).

The spinal puncture is made with the patient in the left lateral decubitus position so that his back is toward the side of the mattress with the gap in it. The malleable German silver needles are made in 3 sizes—No. 17, No. 18, and No. 19 gauge. We prefer No. 18 gauge needles. The site selected for spinal puncture depends on the site of operation—the first or second lumbar interspace for upper abdominal procedures, the third for lower abdominal operations, and the fourth for operations on the perineum, rectum, and lower extremities. A Sise introducer is used to puncture the skin, and on withdrawal leaves a track for the soft, malleable, German silver needle to traverse. When the cerebrospinal fluid escapes, a 10 c.c. Luer-lok syringe is connected and enough fluid withdrawn to make up a 5 per cent solution. We have 300, and 500 mg. ampules of novocain. For estimated short operations we use 300 mg. of novocain dissolved in 6 c.c. of cerebrospinal fluid. For long operations we dissolve 500 mg. of novocain in 10 c.c. of spinal fluid. The syringe is disconnected and the needle plugged to prevent leakage of spinal fluid. Generally, 500 mg. of procaine hydrochloride crystals is dissolved in 10 c.c. of spinal fluid to make a 5 per cent solution which contains 50 mg. to the cubic centimeter. The syringe containing the stopcock is attached to one end of 30 inches of thick-walled, small bore, rubber tubing. The stopcock is opened and 2 c.c. of the mixture is forced into the tubing, thus displacing the air and completely filling the tube. Then the stopcock is closed. The Luer-lok connection at the opposite end of the tubing is securely connected to the needle which was left in the spine. The stopcock is opened and 2 to 3 c.c. of the mixture is introduced into the subarachnoid space and the stopcock is closed.

With the needle left in place, the patient is gently turned on his back so that the needle is in the center of the gap in the pad. It should not touch the table or mattress at any time. The patient should be kept in 5-degree Trendelenburg position during the induction period. When the height of anesthesia is tested and the desired level is not obtained in 10 minutes, an additional injection, usually of 1 c.c., is made. The height of the anesthesia can be extended and controlled in 4 ways; namely, position of patient, volumetric dilution of anesthetic agent (barbotage), rate of injection, and total dosage of drug.

Once anesthesia has been established, it is easily prolonged by small fractional injections when needed, and we have a setup comparable to the one existing when ether is administered by the open drop method or when pentothal sodium is given by the fractional dose intravenous technic. As the anesthesia starts to wear off, the intestines become less contracted, the abdominal muscles grow tense, and the patient complains of abdominal discomfort or pain. Just as we would add more ether under a similar circumstance to produce relaxation during inhalation anesthesia, when this occurs during continuous spinal anesthesia we give a small dose of procaine, usually 50 mg. It takes approximately 90 seconds for this added dose to exert its full effect. After one has had experience with continuous spinal anesthesia, it is possible to give these additional doses at fairly regular anticipated intervals (usually every 30 to 40 minutes) and provide the surgeon with ideal operating conditions of abdominal relaxation throughout the operation.

Preoperative Medication

Three grains of nembutal is given the evening before operation, thus insuring the patient a good night's sleep. Three hours before operation, 3 grains of nembutal is administered by mouth. One hour before operation a hypodermic containing one-fourth grain of morphine sulfate and one-hundredth grain of scopolamine hydrobromide is given. If the sedation is not sufficient, one-eighth grain of morphine sulfate is given intravenously or hypodermically as often as necessary during the operation. By using the proper sedation, these patients do not remember having a lumbar puncture or being operated upon. Most of them sleep throughout the operative period and afterwards for many hours. During long and difficult operative procedures an intravenous injection of 10 per cent glucose solution is given into a vein in the leg. These patients often receive a blood transfusion at the end of the operation.

Analysis of Cases

We give a report on the first 500 cases in which this method has been employed. In each instance the operation was begun and finished under spinal anesthesia and no general or other anesthetizing agent was used. The operations in this series were all below the diaphragm.

Age

The average age for the first 500 cases was 39 years. The oldest patient among this group was 83 years. The youngest was 8 years. A leg amputation was done on the former and an appendectomy on the latter.

Length of Operation

The average length of the operations in this series was 53 minutes. A total gastrectomy required 215 minutes (3 hours and 35 minutes). The shortest procedure took about 5 minutes for an incision and drainage of an abscess.

Dosage

For this series the average total dose of novocain was 242 mg. The average number of injections per patient was 2.6. The largest dose given to any one patient was 2100 mg. of novocain. A definite free flow of spinal fluid was obtained, but the patient was most resistant to the drug. His operation was an appendectomy and excision of a left varicocele. The smallest dose was 25 mg. of novocain for a hemorrhoidectomy.

Effect on Blood Pressure

The average systolic blood pressure at the beginning of operation for this series was 130 mm. Hg. The average systolic pressure at the end of operation was 116. This indicates that there was an average fall in blood pressure of only 14 points. The blood pressure was recorded every 5 minutes of the operation. It was found that soon after the patient received the preliminary intradermal injection of ephedrine sulfate and novocain used to anesthetize the skin and support the blood pressure, there was a general elevation of the blood pressure, but after the operation was in progress, the pressure had a tendency to become constant or to fall below that at the onset. The average high blood pressure was 138. The average low was 103. The lowest that the systolic pressure dropped was to 40 mm. Hg. in a man, age 64, operated upon for acute appendicitis. A woman, age 60, operated upon for a strangulated hernia, had a blood pressure of 240 at the beginning and a systolic of 170 at the end of operation. She received a total of 150 mg. of novocain in 2 injections.

Complications

Headache.—This is a complication which is hard to explain. In the cases of the most simple nature we have had this complaint from the patient. The incidence of headache (2.5 per cent after continuous spinal anesthesia), however, is no greater than when anesthesia is given by the former single injection method. It is interesting to note that in 150 consecutive cases there were no postoperative headaches. Then for no explainable reason we had 5 successive cases with this complaint. This complaint has been relieved by the use of aspirin and lowering the patient's head in the majority of cases.

Urinary Difficulty.—Here again this method has no greater incidence of urinary retention than the ordinary method of spinal anesthesia. Aside from the patients who were catheterized as a routine procedure after operation, the incidence of retention was 3.1 per cent.

Pulmonary.—There were 19 cases with pulmonary complications, making an incidence of 3.8 per cent for this series of 500 cases. There were 11 cases of bronchopneumonia, 4 of lobar pneumonia, 2 of atelectasis, and 1 of pulmonary embolism.

Nervous.—There were no motor or sensory disturbances, no cranial nerve palsies or other neurologic phenomena.

Deaths

There were 27 deaths among this series of 500 cases, putting the gross mortality at 5.4 per cent. The average time that elapsed between operation and death was 7.6 days. In none of these deaths do we believe that the anesthetic agent had any part. We are of the firm belief that, had we employed any other method of anesthesia, our incidence of mortality would be greater than the figures given here. Among the 27 deaths there were 18 cases of malignant disease. They were distributed as follows: 7 cases of carcinoma of the stomach, 4 cases of colon carcinoma, 2 carcinomas of the liver, 2 carcinomas of the pancreas, 2 carcinomas of the prostate, and 1 carcinoma of the uterus. There were 5 deaths from generalized peritonitis among the total of 27 deaths. They were due to the following causes: one case of perforated appendicitis, one case of perforated gangrenous cholecystitis, one perforated duodenal ulcer, one case of perforation of the stomach, and one of the lower end of the esophagus. One patient with advanced myocardial disease died 2 days after femoral embolectomy. One patient died of diffuse pulmonary abscess 35 days after re-amputation of the leg stump.

The following is an outline of 500 operations done under continuous spinal anesthesia:

500 OPERATIONS DONE UNDER CONTINUOUS SPINAL ANESTHESIA

Gastro-intestinal operations	
Stomach	34
Appendix	140
Intestinal and colon operations	27
Biliary tract operations	60
Hernia operations	72
Sympathetic nervous system operations	6
Gynecologic operations	85
Obstetric operations	20
Urologic operations	8
Proctologic operations	18
Miscellaneous operations	30
Total	500

CLASSIFICATION OF 500 OPERATIONS DONE UNDER CONTINUOUS SPINAL ANESTHESIA

- 201....*Gastro-intestinal Operations*
  - 34....*Stomach operations*
    - 16....Subtotal gastrectomy
    - 3....Total gastrectomy
    - 1....Subtotal gastrectomy and appendectomy
    - 5....Subtotal gastrectomy and cholecystectomy
    - 4....Closure of perforated ulcer (duodenal)
    - 1....Closure of perforated carcinoma
    - 2....Cholecystogastrostomy
    - 1....Anterior gastro-enterostomy
    - 1....Closure of spontaneous rupture of normal stomach
  - 140....*Appendix operations*
    - 113....Appendectomy
    - 5....Drainage of appendiceal abscess
    - 6....Appendectomy and excision of ovarian cyst
    - 2....Appendectomy and salpingo-oophorectomy
    - 8....Appendectomy and uterine suspension
    - 1....Appendectomy and excision of varicocele
    - 1....Appendectomy and reduction of torsion of omentum
    - 4....Appendectomy and lysis of adhesions
  - 27....*Intestinal and colon operations*
    - 3....Abdominoperineal resection of rectum (one stage)
    - 1....Abdominoperineal resection of rectum, hysterectomy, and bilateral salpingo-oophorectomy (one stage)
    - 1....First-stage Lahey for carcinoma of rectum
    - 1....Inguinal colostomy
    - 3....Closure of colostomy
    - 1....Ileotransverse colostomy
    - 2....Exploratory and colostomy
    - 1....Resection of splenic flexure, Mikulicz
    - 1....Mikulicz resection of sigmoid
    - 1....Resection of terminal ileum, appendix, ascending colon with cecum and one-half of transverse colon (for carcinoma of cecum)
    - 1....Resection of ileum (intestinal obstruction)
    - 1....Perforated sigmoid—drainage, colostomy
    - 3....Lysis of adhesions—reperitonization
    - 3....Abdominal section with biopsy of liver
    - 1....Cholecystogastrostomy and biopsy of pancreas
    - 1....Incision and drainage of subhepatic abscess
- 60....*Biliary Tract Operations*
  - 23....Cholecystectomy
  - 11....Cholecystectomy and lysis of adhesions
  - 17....Cholecystectomy and appendectomy
  - 6....Cholecystectomy and T-tube drainage of the common bile duct
  - 1....Drainage of the common bile duct
  - 1....Cholecystectomy and right oophorectomy
  - 1....Cholecystectomy and anterior gastro-enterostomy
- 72....*Hernia Operations*
  - 36....Inguinal herniorrhaphy
  - 12....Inguinal herniorrhaphy and appendectomy
  - 1....Strangulated inguinal hernia
  - 6....Bilateral inguinal herniorrhaphy
  - 3....Femoral hernia
  - 2....Umbilical herniorrhaphy and appendectomy
  - 1....Umbilical herniorrhaphy
  - 1....Incisional herniorrhaphy, appendectomy, and cholecystectomy
  - 1....Inguinal herniorrhaphy and hysterectomy
  - 2....Ventral herniorrhaphy
  - 1....Incisional herniorrhaphy

- 6....*Sympathetic Nervous System Operations*
  - 4....Presacral sympathectomy
  - 2....Bilateral lumbar gangliectomy
- 85....*Gynecologic Operations*
  - 12....*Perineal*
    - 2....Dilatation and curettage and radium
    - 1....Vaginal hysterectomy and perineorrhaphy
    - 1....Fothergill, anterior and posterior colporrhaphy and perineorrhaphy
    - 2....Dilatation and curettage
    - 6....Perineorrhaphy
  - 40....*Abdominoperineal*
    - 24....Plastic and hysterectomy
    - 11....Plastic and appendectomy
    - 3....Dilatation and curettage and cauterization of cervix, appendectomy, hysterectomy, salpingectomy, and oophorectomy
    - 1....Dilatation and curettage, Coffey suspension, ligation of tubes
    - 1....Plastic and hysterectomy and cholecystectomy
  - 33....*Abdominal*
    - 13....Supravaginal hysterectomy
    - 1....Right salpingectomy and oophorectomy
    - 1....Bilateral salpingo-oophorectomy and appendectomy
    - 2....Salpingo-oophorectomy and appendectomy
    - 2....Coffey uterine suspension
    - 1....Drainage of pelvic abscess
    - 8....Hysterectomy, bilateral salpingo-oophorectomy, and appendectomy
    - 3....Hysterectomy and appendectomy
    - 1....Ovarian cyst
    - 1....Bilateral salpingo-oophorectomy and resection of 12 inches of ileum
- 20....*Obstetric Operations*
  - 20....*Abdominal sections*
    - 16....Cesarean section
    - 4....Cesarean section and ligation of tubes (sterilization)
- 8....*Urologic Operations*
  - 2....Prostatectomy
  - 2....Cystotomy
  - 1....Excision of cyst of urachus and appendectomy
  - 1....Excision of epididymis
  - 1....Uretero-lithectomy
  - 1....Right nephropexy
- 18....*Proctologic Operations*
  - 10....Hemorrhoidectomy
  - 7....Fistula in ano
  - 1....Incision and drainage of ischiorectal abscess
- 30....*Miscellaneous Operations*
  - 14....Excision of pilonidal sinus
  - 4....Amputation of mid-thigh
  - 1....Reamputation of stump
  - 3....Excision of internal semilunar cartilage
  - 1....External iliofemoral arteriovenous aneurysm
  - 1....Right femoral embolectomy
  - 1....Removal of needle from foot
  - 1....Excision of lipoma of buttock
  - 1....Excision of coccyx
  - 1....Repair of evisceration
  - 1....Excision of tumor of thigh

Summary

A method for continuous spinal anesthesia is presented with some of the important observations on the first 500 patients anesthetized by this method. Every operation was begun and completed under spinal anesthesia. The blood pressure showed less marked fluctuations than from other methods of spinal anesthesia. We hope that this method of spinal anesthesia proves to be safer and more controllable than older methods.

I want to thank the George P. Pilling & Son Company, 23d and Arch Streets, Philadelphia, for their untiring effort and co-operation in making these special instruments and equipment. They have been very responsive to every suggestion for changes and also improvement.

ABSTRACT OF DISCUSSION

Henry S. Ruth (Philadelphia): Dr. Lemmon deserves a great deal of commendation for the energetic way in which he has experimented and applied continuous spinal anesthesia. When he suggested that we use this method we were, of course, very much interested in it. We attempted to determine its proper application, where it would be of most value, and particularly were we interested in attempting to find out whether or not it would make spinal anesthesia more safe for the patient. We have been using this method for such a short time and in such a small series of cases—less than 100 that we do not feel justified at this time in making many definite remarks concerning it. However, it does seem that this method makes possible the administration of markedly reduced dosages of the anesthetic agent and, therefore, is more safe. As yet there is no anesthetic that is ideal. All of the agents in common use produce some by-effects which are not advantageous. However, this method appealed to us because it decreases the by-effects.

We initially employed a 10 per cent solution of the anesthetic drug, but quickly reduced this to a 5 per cent concentration. In the last 50 or 60 cases of our series we have employed a 3 per cent solution with entire satisfaction. Thus, the dosage of the anesthetic agent required is materially reduced, while at the same time it appears as though we are able to obtain a higher anesthesia with less of the drug because of its greater dilution.

We have never failed to obtain adequate spinal anesthesia with this method. Even though we never attempted at any time to continue the operations in the face of inadequate anesthesia, the small doses of anesthetic drug, which were entirely adequate with this method, were enlightening. We would not have had the temerity to attempt abdominal surgery by the administration of such small quantities had we not had the assurance provided by means of this method to reinject additional quantities at any time. As examples we may cite 2 posterior rectal resections, one lasting 3 hours and 5 minutes under 150 milligrams of procaine, and a second, 2 hours and 5 minutes under 60 milligrams of procaine; a difficult entero-enterostomy requiring 2 hours and 10 minutes under 120 milligrams of procaine; a resection of the bladder lasting 1 hour and 28 minutes under 90 milligrams of procaine; 2 inguinal hernias under 45 milligrams of procaine each; a hysterectomy requiring 1 hour and 20 minutes with 90 milligrams of procaine; an inguinal hernia with fascial transplant requiring 1 hour and 15 minutes under 60 milligrams of procaine; and several appendectomies with 60 milligrams of the same drug. Transurethral prostatic resections rarely require more than 30 milligrams of procaine in our hands.

We believe, from our observations regarding this method, that there are individual differences in the amount of the anesthetic agent required, just the same as when an intravenous or an inhalation anesthetic is elected.

We are able to obtain a higher anesthesia when the patient is in the Trendelenburg position. Even a small amount of procaine added to the cerebrospinal fluid increases the specific gravity of the mixture, and therefore, of necessity, it would be expected that it would rise in a cephalad direction in the spinal canal when the patient is placed in the Trendelenburg position. The smaller doses alluded to, of course, apply more to operative procedures in the lower abdomen, as compared to those in the upper abdomen, because more of the drug is required to establish anesthesia in the upper abdomen.

The only unpleasant factor associated with this method that we have observed is that it is slightly cumbersome. To date, from our small series of cases, about all that we can definitely state is that continuous spinal anesthesia is a valuable method of administering the anesthetic agent where it is thought necessary to be completely assured that the operative procedure may be completed under spinal anesthesia, and second, it is of value for the physically handicapped patient where very small doses of the anesthetic agent may be employed with beneficial effects to the patient.

BLOOD PLASMA RESERVOIR NOW BEING ESTABLISHED

William DeKleine, M.D., Medical Director, American Red Cross

Last summer (1940), in response to an urgent request from England, the American Red Cross in cooperation with the Blood Transfusion Betterment Association began collecting and shipping plasma to Great Britain. This program, which was used incidentally by the Red Cross for an intensive study of the collection, processing, shipping, and distribution of plasma, was terminated Feb. 1, 1941, when the British Red Cross announced it had perfected plans that would enable it to carry on from there. While the program was in operation, approximately 15,000 pints of plasma in saline solution were shipped, representing donations from that number of persons.

During this same period the Medical Corps of the Army and Navy and a special committee of physicians of the National Research Council also were pursuing an intensive study of the use of plasma. It is from these simultaneous activities that the present project of creating a national reservoir of blood plasma springs.

The substance is being prepared in two forms: lyophilized, or dry, powdered plasma, which by the simple addition of sterile, distilled water is ready for use, and ordinary liquid plasma. Present plans call for the production of 10,000 units of dried plasma, a unit being equal to one pint of processed whole blood. The amount of liquid plasma to be stored has not been definitely determined as yet. Though liquid plasma has been used with excellent results after months of storage, it is believed that dried plasma, properly packed in a vacuum, can be kept for years.

Processing of whole blood for the production of plasma is being done at the Sharp and Dohme Laboratories in Philadelphia, where the product is also being stored. Donors are currently being enrolled by Red Cross chapters in the Greater New York area and in Philadelphia. As need arises, chapters in other districts will be called upon to enroll donors who will be asked to give a pint of their blood so that others who may be bearing the brunt of battle for democracy will live.

Separating plasma from the cellular elements of whole blood is accomplished by centrifuging at a temperature of 2 to 4 C. Plasma from 50 persons is then pooled.

This pooling eliminates the necessity of classifying plasma with respect to the blood group of the recipient. Typing of the recipient's blood is unnecessary because the agglutinin titer of pooled plasma is extremely low and no erythrocytes are present to be agglutinated by the potentially incompatible serum of the recipient.

After pooling, individual containers of 250 c.c. capacity are filled with plasma. To maintain sterility until ready for the next step of the process, a sterile, cotton-plugged rubber tube is applied over the mouth of the container.

Liquid plasma is converted to the frozen state at a temperature far below freezing. The container is immersed in a mixture of dry ice in a low-freezing solvent. It is then inclined and rotated. Under this procedure, known as "shelling," the plasma freezes in a layer on the inside wall of the container.

Rapid freezing is extremely important, for the lyophile or drying process aims at conversion with the least molecular rearrangement, and at "fixing" of the original colloidal system.

This frozen plasma is then subjected to a high vacuum to remove the water vapor content without melting or softening the substance. This step is based on the principle that ice can be vaporized under high vacuum without passing through a liquid state. Needless to say, during this step the high vacuum must be maintained throughout and removal of water vapors liberated must be provided for.

Vapor may be removed through the use of a condenser, the bulb of which is immersed in a freezing mixture so that water is frozen as fast as the vacuum draws it from the drying plasma. The temperature of the plasma is gradually raised after most of the moisture has been removed until it reaches 20 C. or more. Dehydration is continued, however, until the moisture content is less than one per cent.

Maintaining dried plasma under constant vacuum is best for preservation of sterility and maintenance of normal characteristics, and for this reason the container is especially designed to maintain the desired vacuum after dehydration. The mouth of each container is sealed by the insertion of a tight-fitting rubber stopper after the drying process is completed and without breaking the vacuum. Once this stopper is in place, the vacuum used in the dehydration process is released and the container is removed from the apparatus and immediately flame-sealed.

After a suitable interval these containers are tested for adequate vacuum and all that are found defective are discarded. Samples of the finished lyophilized blood plasma are also tested for sterility and safety. Requirements of the National Institute of Health are thus fully met and the product is ready for use.

Round-Table Conference on Peripheral Vascular Disease

The Round-Table Conference on Peripheral Vascular Disease was held Oct. 3, 1940, during the Ninetieth Annual Session of The Medical Society of the State of Pennsylvania at Philadelphia. Dr. John P. Henry, Pittsburgh, chairman, presided. He was assisted by Drs. David W. Kramer, Hugh Montgomery, Norman E. Freeman, William D. Stroud, and Edward F. McLaughlin, all of Philadelphia. For the first 20 minutes "movies" were shown of various diagnostic tests by Dr. Henry.

THE CHAIRMAN: Peripheral vascular disease is a big subject and one that we can hardly do justice to in the limited time at our disposal. It is a subject that has not been adequately explored. Unquestionably there are people in the audience as well qualified to speak as are the men on the platform this morning. However, we have selected these gentlemen because they have had extensive experience in their relative fields and because we feel they are well qualified to follow the prescribed outline. If we can send you home with a deepened interest or with some information or suggestion that may make some one in your practices a little happier, we will feel that the effort we have made to get this program together has not been in vain and we will be well rewarded.

The Diagnosis of Peripheral Vascular Disease

David W. Kramer, M.D., Philadelphia, Pa.

Peripheral vascular disease is rapidly being accepted as a new branch in the medical sciences. The subject is interesting as well as fascinating because of the variety of cases which present themselves for diagnosis and treatment.

This is an unusual field of medicine because our knowledge is gradually being shaped as we go along. As Dr. Henry has remarked, your word is as good as ours and you can discuss it as well as we can. We may have to alter our conception of diseases in the near future. All this will depend upon how careful we are in our observations, how logical we are in our interpretations, and how efficient the pathologist is when studying sections of vessels which have been procured. To these qualifications may be added a careful follow-up of the cases to determine whether or not the future findings or future progress of the cases conform to our deductions and diagnoses.

I think we are safe in assuming that there is more interest in peripheral vascular disorders today than before. This question arises: Are there more cases of peripheral vascular disorders, or are we recognizing more of these cases because of our greater interest and because we have at our disposal improved methods of diagnosis in the form of circulatory function tests? Personally, I think the condition is really on the increase. Why this is so, I am not prepared to say. When we know more about the etiology of vascular disorders, we may be able to answer these questions, but this will not be an easy matter. I say this because no one has yet been able to tell us the exact cause of Buerger's disease, which is one of the most prominent diseases of the vessels. At least it is a disease which has been more discussed than the others.

Although we may be thwarted in understanding the cause of arterial disease, we are in a better position to diagnose these cases. The medical profession must learn that when patients present themselves with pains or discomfort in the feet or legs, besides thinking in terms of flat feet, arthritis, or neuritis, we must also include the possibility of some vascular disease. When the thought once arises that the condition may be due to some disorder of the circulatory system, then it should not be difficult to confirm these suspicions. This may be determined by a more careful history and a more thorough examination.

The patient should be questioned as to the existence of such symptoms as cramps or claudication, rapidly developing fatigue, pain, coldness in the feet, numbness, and burning pains. In the course of a physical examination, we must include the lower extremities as well as the upper. On inspection, we may notice pallor, or intense rubor of the feet; certain lesions, such as scars or blebs, particularly in diabetics, should make one suspicious of a possibly existing arteritis. The dorsalis pedis and posterior tibial arteries should be examined for pulsations and the dorsalis pedis for the existence of sclerosis. The absence of pulses of these vessels, coldness of the feet, pallor, existence of trophic disturbances of the skin between the toes, and trophic changes in the nails will confirm the symptoms indicating a possible arterial disorder.

The employment of various tests for circulatory function of the extremities is an important feature in making the diagnosis. These tests have been described by Dr. Henry. Some of them are easily performed and can be done at the bedside. Others are more elaborate and can be carried out only in the hospital or clinic. Some are more practical than others. However, the easier methods can be mastered and anyone interested in this subject will in a majority of cases be able to arrive at fairly satisfactory conclusions and be able to diagnose vascular disorders.

Having recognized a patient who has a disturbance of the peripheral circulation, the next problem is to make the exact diagnosis. There are various arterial diseases and disorders. Some of them are grouped as the occlusive organic diseases. These may be subdivided into the inflammatory and noninflammatory types. There is another group which may be designated as the nonorganic disorders. This group will embrace the various types of vasospastic disorders and the vasodilator group of disturbances. Time will not permit going into these various conditions. I will briefly discuss the various types of organic, occlusive vascular disorders.

Buerger's Disease or Thrombo-angiitis Obliterans.—In this condition we are dealing with an involvement of the deeper and larger vessels, both arteries and veins. It is presumably caused by an infection. In about 25 per cent of the cases there is a history of phlebitis. The infection period passes presumably unrecognized. After it has subsided, pathologic changes take place in the vessels with the development of thrombi which occlude the lumina of the vessels. Nature takes over the blood supply by building up a collateral circulation, which probably is sufficient for the time being. Some time later, presumably years, when the collateral circulation is insufficient and is unable to carry out properly the distribution of blood to the distal parts, the patient then experiences various symptoms. He will complain of pains in the feet or legs. These pains become aggravated by effort. Fatigue is an early and persistent symptom. Claudication appears. The patient is unable to walk more than a block or half-block without stopping and resting because of the cramp-like pains in the calf. The symptoms are limited to the lower extremities.

Later, as the condition progresses, the patient may complain of the upper extremities being similarly involved. Pain seems to be a striking symptom. It is due to the disturbances in nutrition to the tissues and may also be due to the involvement of the nerves. In some of the severe cases, examination will show that the nerves are caught in the adhesions around the vessels. Examination will reveal trophic changes in the distal parts and absence of pulses. Peripheral vessels are not only involved but the larger arteries in the thigh as well are usually found to be sharing in the pathologic process. Buerger's disease is usually seen in males. It is rare in females. From our experience we have also noticed that it is rarely seen in the colored race.

Other prominent disorders that must be considered are arteriosclerosis obliterans, diabetic arteritis or atheromatosis, embolic occlusion, and endarteritis obliterans. There are other conditions as well, but, as I mentioned before, time does not permit a more general discussion.

Arteriosclerosis Obliterans.—This condition is commonly found among patients with peripheral vascular disease. It is usually seen in the aged. It may occur in either sex and in any race. Changes take place in the walls of the vessels, the intima becomes thickened, and thrombi develop on the intima, with gradual occlusion of the lumen. Besides the organic changes in the walls, one often sees patients whose symptoms are also attributed to an associated spasm of the vessels. These patients frequently complain of fatigue and discomfort of the leg, coldness, and cramps. Some experience claudication when walking; others may give a history of cramps occurring only at night, when at rest. This is an unfortunate state of affairs. Their sleep is disturbed and they have to get out of bed in order to become comfortable.

Examination will reveal the absence of pulses in the feet, and the vessels may feel sclerosed to the examiner. The roentgenogram will show sclerotic changes in the arteries. At this point I would like to stress the fact that the mere presence of arteriosclerosis does not necessarily mean that the circulation is inefficient. Some patients will show definite signs of arteriosclerosis, yet the circulatory function tests, as well as the lack of symptoms, will indicate that these patients have an efficient arterial supply to the distal parts.

Diabetic Arteritis (Atheromatosis): In this condition biochemical changes evidently take place in the walls of the arteries resulting in thickening of the intima, and later occlusion of the lumina may result. Although many question the advisability of considering diabetic arteritis as an entity, Warren of Boston has convincingly shown that in diabetes thickening of the intima may occur, with deposits of cholesterol crystals between the intimal cells. There may be spaces between the cells which were formerly occupied by glycogen. It has also been shown that, in diabetics, calcific deposits may develop in the walls of the vessels at an earlier age than we ordinarily see arteriosclerosis appear. The symptoms of diabetic arteritis are no different than in any other form of occlusive vascular disease. These patients usually complain of fatigue, coldness, and cramps upon effort. However, they may show certain lesions which I described in a previous publication, calling attention to the appearance of small scars, pox-like marks, larger scars, rose spots, and blebs which may appear without any apparent cause. These blebs are large in size and rapidly develop into superficial gangrene. The circulatory function tests will indicate the existence of an impaired peripheral blood supply.

Embolic Occlusion.—This occurs more commonly than we realize. When the larger arteries are involved with the appearance of gangrene, the diagnosis is relatively easy. This applies to the popliteal and femoral arteries and the aorta. However, the smaller branches may also be involved without necessarily going into gangrene. Embolic occlusion should be recognized by the suddenness and abruptness of onset, with the appearance of pain which may be intense, blanching of the extremity, coldness of the part, numbness, and if a large vessel has been attacked, there may be loss of power of the limb. Usually the part is blanched in appearance, coldness is present, and pulses which previously may have been present are no longer felt. If a large vessel is involved, gangrene appears within 24 to 48 hours. The source of the embolus must be established. Usually it comes from the heart, particularly if there is coronary artery disease present. However, clots may come from a dilated auricle or dilated auricular appendage. Sometimes the emboli occur from plaques which have broken off from arteriosclerotic vessels. Smaller emboli are seen in subacute bacterial endocarditis. As a rule, these emboli cause phenomena on a much smaller scale and the problem of extensive gangrene does not arise.

Endarteritis Obliterans.—This condition is not well understood. Before Buerger made his contribution on thrombo-angiitis obliterans in 1908, most of the cases of gangrene were attributed to endarteritis obliterans. Buerger called attention to the essential differences between endarteritis obliterans and thrombo-angiitis obliterans. In Buerger's disease the elastic lamina is intact and the lumen is occluded by the existing thrombus. In endarteritis obliterans the encroachment of the lumen is the result of a piling up of the intimal cells. The symptoms of endarteritis obliterans are usually pain in the extremities, numbness, and burning pains. There may be fatigue, and claudication may exist, but it is not as consistent a finding as in Buerger's disease. Endarteritis obliterans may occur in either sex and in any race. The colored race is just as susceptible as the white. The upper extremities are frequently involved as well as the lower; in fact, the clinical picture may be more advanced in the hands than in the feet.

Endarteritis obliterans may be produced by various influences such as infection and syphilis. There is a physiologic form as seen in the vessels of the gonads after mid-life; it is seen in the vessels of the umbilical arteries of the newborn, and closing of the ductus arteriosis is another example of arteriosclerosis obliterans. In this condition the smaller vessels seem to be attacked rather than the larger and deeper structures as seen in Buerger's disease.

It would be nice if I could continue this discussion and include toxic arteritis, thrombosis, the occupational forms of arteritis, and so forth, but I hope I have made clear the more common conditions that a practitioner may meet in general practice.

Medical Treatment of Peripheral Vascular Disease

Hugh Montgomery, M.D., Philadelphia, Pa.

Dr. Kramer has outlined the diagnosis of various peripheral vascular diseases. I should like first to speak of another aspect of diagnosis. The term diagnosis can also be applied to evaluating the type of arterial lesion within a single diagnosis and the severity of such a lesion within the single diagnosis. For instance, endarteritis obliterans can for a time be primarily a vasospastic disease and at other times primarily a fixed occlusive disease. After it is a fixed occlusive disease, instead of remaining so, the capacity for blood flow may return, showing that the collateral circulation has taken over the job of the vessels which were occluded. It is very important that these factors in diagnosis be kept in mind and be applied to therapy.

I was asked to talk about medical therapy and that depends so much not only on the diagnosis and on the extent of past damage but also on the present capacity for vasodilatation. I saw a woman a month ago who had a blue, cold painful foot. There was not even a femoral pulse, and no oscillations except very high in the thigh. The main arteries to the whole leg were occluded. Examination left me with the impression that the prognosis was very poor, but further study showed that this was not the case. With a vasodilatation test, the test in which vasomotor tone is relieved, in this case by heating the arms, the temperature of the skin of her toes rose from 22 C. to 32-33 C. Pulses and oscillations failed to return. She had, as far as we could tell, as good a capacity for blood flow through her foot as anyone. To reconstruct the picture, collateral blood supply had replaced occluded vessels but had undergone abnormal vasoconstriction. With simple medical measures she was free of pain within a week; the foot was warm and no longer cyanotic. Now she is fully active and free of symptoms.

This is an unusual case, but to a lesser extent the same sort of thing is common enough. Adequate studies prevented her having to have suction and pressure therapy and hospitalization or other prolonged therapy. She was asked to stay at home, to keep very warm, and not to smoke. She had been alarmed by her friends. As you know, the influence of emotions on the vasomotor system can be very great. In her case reassurance contributed to improvement. This patient is an example showing that within a certain diagnosis the therapy may be very different in one person from that used in another person. She also serves to illustrate the point that physical findings alone, without tests, may be misleading.

The principles of therapy can be said to rest upon 3 factors: (1) the removal of vasomotor tone when there is a capacity for vasodilatation; (2) measures designed to aid blood flow through areas of partial occlusion; and (3) decreasing the need, or demand, for blood.

In what way can one take away vasomotor tone? A sympathectomy may be required, and is practically always effective. Its use is largely restricted to severe vasoconstriction in young patients. Medical measures should not be forgotten, such as keeping the patient warm and having him avoid tobacco. You know the old rule that a person who has a peripheral arterial disease should not smoke. Will most patients agree to stop smoking? We have been surprised to learn that a patient will comply if he can be convinced that it is an important part of his treatment, but if we only tell him to stop he is rarely convinced and rarely complies. He should be given evidence that *tobacco causes vasoconstriction* and aggravates his disease. Sometimes we show patients graphs of measurements of blood flow following smoking, or following the administration of nicotine. Most patients with peripheral arterial occlusion from arteriosclerosis and all with thrombo-angiitis obliterans should avoid tobacco. Three or 4 days after stopping smoking the patient usually becomes discouraged and needs encouragement from his physician. Our experience has been that stopping smoking is the rule and not the exception.

The influence of either cold or of uncontrolled heat on patients who have a poor blood supply may be extremely deleterious. Cold causes vasoconstriction perfectly naturally because a patient subjected to cold tends to have a lower body temperature, and to prevent lowering of body temperature the skin vessels constrict to avoid unloading heat from the body to the environment. Heat makes for comfort, and mildly warm air, preferably controlled by a thermostat in a leg cradle, or when applied somewhere else on the body other than the part affected, is useful. However, an ischemic part cannot carry heat much above body temperature away fast enough to prevent undue metabolic demands or actual burns. Uncontrolled direct heat is one of the main immediate causes of the ulcers which our patients present.

We have been talking about therapy of abnormal vasoconstriction as an element in occlusive vascular disease. Abnormal vasoconstriction occurs in its purest state in Raynaud's disease. Capacity for vasodilatation is normal. There is also the patient who has little or no capacity for vasodilatation, but who has perhaps some lesion, with pain, who has kept warm, who has stopped smoking, has been given instructions regarding care to avoid possible trauma to his feet, is using Buerger's exercises, and may even have been put to bed, but who still has distressing symptoms. There is sometimes little more that can be done to further vasodilatation because there is insufficient capacity for vasodilatation. Now what can be done for these patients? Obviously, legs do sometimes require amputation. As far as I know today, some of these patients are the only ones who will require amputation. And, on the other hand, a fairly large group of even these patients do get by if they can be temporarily carried through a period sufficiently prolonged to allow growth of further collateral circulation. Perhaps a primary collateral circulation has been formed and it too has been largely occluded.

Good nursing care and complete bed rest can be more easily provided by the hospital and certainly any patient with uncontrolled pain should be admitted for at least a short period of hospitalization. In our hospital, if the patient has no deep lesion to contraindicate the use of suction and pressure, a trial of this is given. If there is relief in 5 or 10 minutes, if during each suction phase the foot promptly becomes pink, we send the patient daily to the physical therapy department for suction and pressure therapy. If suction and pressure therapy is contraindicated, prolonged Buerger's exercises are carried on by means of the Sanders oscillating bed. If the patient has diabetes, the control of his diabetes is an important factor.

Dr. Freeman will, I think, describe the care of open lesions and the surgical control of pain. Patients with painful thrombo-angiitis obliterans are frequently greatly improved by small intravenous doses of typhoid vaccine. The dose is regulated to cause a mild fever, and kept low enough to avoid a chill. Two or 3 injections are given each week for several weeks. If the patient improves, all therapy is slackened to the point at which it can be carried on at home. If 2 weeks go by and no improvement is shown, the ulcer gets deeper, and the pain increases, then the question of amputation must be faced. Younger patients rarely require amputation today. This question of amputation will arise sooner when there is rapidly ascending infection. With spreading streptococcic infections sulfanilamide gives one much more leeway than formerly.

Ambulatory care is largely prophylactic, and indeed one of the main opportunities that we have in treating all these patients is to lessen the demand for blood flow. Each patient is given a detailed instruction sheet on care of the feet and avoidance of trauma. He is made to rest, and is given time to develop a collateral circulation. If the patient hits his toes or chills his feet severely, there is trouble. If a hot lamp not controlled by a thermostat is put near the toes, or if strong medicines such as iodine are applied, the result may be disastrous. Warm socks and generous-sized shoes are advised. Dermatophytosis is treated thoroughly and yet cautiously. We believe that this prophylactic care, of lessening the need for blood flow, is the most productive part of the care of most patients with peripheral arterial occlusion. It should be carried on long after all symptoms have subsided.

In our clinical experience we have an amputation mortality of about 5 per cent on all patients, more than one-half of whom have advanced peripheral arterial disease with some occlusion, and followed from 1 to 7 years. Ours is a medical clinic. A surgical clinic, because of a selection of more seriously diseased patients, cannot, of course, have such a low mortality.

QUESTION: I am interested in a simple test that can be done without any special apparatus. What is the particular value of the test which consisted of stroking the patient's arm or wrist and then putting the arm down and stroking it (in the motion picture showing special tests)? Also, I would like to know why they waited so long before occluding the radial artery?

DR. MONTGOMERY: That test was performed because in that individual the ulnar pulse could not be felt. The test substantiated the impression of a blocked ulnar artery. Occlusion of the ulnar artery is sometimes of great diagnostic significance in that it may be the only pulse lost and the only convincing evidence of occlusive vascular disease. Its absence then is almost diagnostic of thrombo-angiitis obliterans. The test consisted simply of raising the hand and preventing all blood flow by tightly grasping the wrist, pressing out the radial pulse while releasing the ulnar area, and noting whether blood flowed into the blanched hand. When the radial pulse is pressed out, the blood can enter the hand only through the ulnar artery. In this patient it flowed into the right artery but not into the left artery. Consequently the left ulnar artery was occluded; the right was patent.

In answer to the last question, the radial pulse was pressed out from the start of the test by grasping the wrist.

Surgical Treatment of Peripheral Arterial Disease

Norman E. Freeman, M.D., Philadelphia, Pa.

Gangrene has been defined as the "death of tissue due to interference with circulation." With this definition in mind it is clear that there are 2 factors which must be considered in any understanding of the process of gangrene: (1) the arterial supply, (2) the metabolic needs of the part. Just as the arterial supply, even in the presence of organic obliterative vascular disease, may be varied through the changes in the local vascular tone, so also the metabolism of the tissues is dependent upon many factors. Physiologic studies have demonstrated that heat has a profound influence in increasing the metabolism of the tissues. If the blood vessels can increase in caliber in order to supply more blood, the greater metabolic needs can be met. However, in the presence of severe occlusion, increased blood flow may not be possible and, under such circumstances, *gangrene may actually be precipitated by the application of external heat.*

A second factor which is of great significance in its effect upon the metabolism of the tissues is infection. Here again we have a frequent factor in the production of gangrene. Tissues with a limited blood supply may be able to adjust quite satisfactorily if infection is not present, but when, due to epidermophytosis, a blister, a crack between the toes, or any break in the skin, infection is allowed to enter, gangrene may rapidly develop. *In the absence of adequate circulation, infection leads to gangrene.*

The third most common factor which may precipitate gangrene in the presence of peripheral arterial disease is trauma to the tissues. And this trauma need not necessarily be physical. It can be chemical as well. *Antiseptics injure tissues just as they will injure bacteria.* It has been our unhappy experience, in patients referred to the peripheral vascular clinic of the University of Pennsylvania Hospital, to find that injury of tissues from the application of strong antiseptics was one of the frequent exciting causes of the development of gangrene. *Strong antiseptics have no place in the prophylaxis or treatment of the lesions of peripheral arterial disease.* Potassium permanganate for epidermophytosis, alcohol rubs for sterilization of an intact skin, and, in cases of ulceration, sulfanilamide crystals, saline dressings, hydrogen peroxide, zinc peroxide, hexylresorcinol, and azochloramide are as strong as we dare apply.

When we are confronted with gangrene, what can be done? In the first place, *gangrene cannot be excised.* If the blood supply is so inadequate that the integrity of the tissues cannot be preserved in the distal portions of the extremity, it is all too probable that the blood supply to the tissues just proximal to the gangrenous area is inadequate to heal tissues if they are exposed to the trauma of operation. Under such circumstances what are we to do? How are we to care for the localized area of gangrene in such a way as to minimize the danger of infection and to allow the extremity to heal with the smallest loss of tissue? At the same time, how are we to keep the patient's pain from becoming intolerable? Let us take up first the treatment of the local lesion.

A healthy scab is nature's best defense. Dry gangrene is no hazard since it is only in the presence of moisture that bacteria can grow. Beneath a scab or crust, however, infection may lurk. It is imperative to examine these lesions carefully and frequently in order to discover accumulations of serum or pus at the earliest possible moment. An accumulation of serum is bound to take place between the dry gangrene and the living tissues, especially as healing takes place. Dr. Isaac Starr suggested the following procedure which we have used in the past 4 years at the University Hospital with satisfaction: As soon as an accumulation of serum beneath the crust is suspected, vaseline gauze is applied to the line of demarcation or the crust which is to be softened. After 12 to 24 hours the dressing is removed and it will be found that the crust has softened. With sterile forceps and scissors it is then gently removed, staying well within the border of the necrotic tissue. All loose débris should be removed. *Bleeding should not be produced, neither should pain be occasioned.* As soon as the line of demarcation has been cleaned, warm saline dressings should be applied and these dressings should be changed every 8 hours. By this means the serum is removed from the wound as fast as it is formed. Within 24 to 48 hours the area is clean and can be allowed to dry without any dressings. This technic can be repeated as often as is necessary until final healing has occurred.

Pain, especially in cases of thrombo-angiitis obliterans, was formerly considered sufficient reason for amputation of an extremity. It is our feeling, however, that *amputation, although it solves the problem of the surgeon, only increases the problem of the patient.* We now feel that pain is no longer an indication for amputation, especially in cases of Buerger's disease. We were brought to this realization by 2 factors: (1) that by crushing the peripheral nerves we can prevent the pain of gangrene in Buerger's disease, and (2) that given time, in a majority of cases, collateral circulation can reestablish itself to such an extent as to heal the local lesion. Through the work of Smithwick and White, of Boston, it was found that the nerves supplying the foot could be crushed in the lower part of the leg so as to denervate the foot completely and at the same time leave the muscles of the leg unaffected. The superficial and deep peroneal, the sural, the posterior tibial, and the saphenous nerves can be crushed in the lower third of the leg with paralysis of only the intrinsic muscles of the foot. Walking is not precluded. With the use of this technic the nerves have been crushed in 11 patients in the past 3 years in the vascular clinic of the Hospital of the University of Pennsylvania with the loss of but 3 extremities.

As an example of the benefit of crushing of the peripheral nerves, I should like to cite the end results in one patient—G. E. This patient, who is now 40 years old, was admitted to the University Hospital in 1937 with gangrene of the first and third toes of the left foot. He was suffering from extensive thrombo-angiitis obliterans with occlusion of the femoral artery on the left side. The patient had been kept awake for 3 months because of severe pain. Conservative treatment by injections of citrate, sodium chloride, and typhoid vaccine, and rest in bed had proved unavailing. The left foot was edematous, cyanotic, and exquisitely painful.

He insisted upon hanging his leg over the side of the bed so that the edema extended up to the knee. Preparatory to crushing the nerves of his leg, boards were placed along the side of his bed to prevent him from hanging his leg down. He was given liberal medication of morphine. After 3 days of this treatment the peroneal nerves and the posterior tibial nerve were crushed under local anesthesia. By these operations he was completely relieved of his pain. The gangrene then extended to the base of the great and third toes. These toes were allowed to "demarcate" and as the collateral circulation re-established itself the open lesions were grafted. He left the hospital in 3 months. The following year he was readmitted with severe gangrene of the toes of the right foot. Again, the superficial peroneal, the deep peroneal, and the posterior tibial nerves were crushed. The end of the great toe was allowed to demarcate and the lesion finally healed. With complete abstinence from smoking he was able to regenerate his collateral circulation so that today he is back at work without the handicap of amputation of his legs, which would have been necessary if the nerves had not been crushed.

The question has frequently been asked, "Are we justified in taking away the patient's sensation of pain? Are we not taking undue risks in removing one of nature's warning signals?" It is quite true that the problem of insufficient circulation is increased by removing the danger signal of pain. No longer can we rest assured that all is going well simply because the patient has no pain. It is necessary to inspect the part carefully and suspect any slight deviation from normal. Crushing the nerves relieves the patient, but it adds to the complexities of medical and surgical care. In our experience it has been possible to relieve pain and promote healing in patients with Buerger's disease. In patients with diabetic gangrene or with arteriosclerosis, crushing the peripheral nerves has uniformly failed to prevent amputation of the leg. The difference, we believe, is associated with the capacity for regeneration of collateral circulation. In patients with Buerger's disease, this capacity is excellent. Patients with diabetes and arteriosclerosis, who are usually older, have not the same capacity.

Another question which we have had to answer is: "Aren't you jeopardizing the lives of your patients who have infection in ischemic tissues by not resorting to immediate amputation?" It was probably so in the days before chemotherapy. By delaying amputation the optimum time before spread of infection took place was occasionally missed. At the present time, however, with sulfanilamide and other forms of chemotherapy, it has been possible to hold on to an infected ischemic extremity for a longer period of time. Immobilization of the part and sulfanilamide in doses of 15 grains every 4 to 6 hours have allowed the infection to be walled off so that amputation could later be performed and the stump closed without drainage because spread of infection through clean tissues had been prevented. In the past 3 years we have not drained a single amputation stump and have had no serious infection in spite of "holding on" to infected, ischemic extremities as long as possible.

When amputation is inevitable, either to save the life of the patient or because there is no reasonable expectation of securing a useful extremity, what measures should be used to give the greatest opportunity for survival? In the first place, it must be realized that the patient with peripheral vascular disease is suffering usually from a process which involves arteries throughout the body. Again, especially in the older patients, there is generalized debility, frequently nutritional and vitamin deficiencies, and usually there has been a prolonged period of pain and worry. The trauma of operation is frequently all that is needed to upset the balance and may lead to rapid failure.

In the past 4 years we have paid the utmost attention to the general condition of the patient before amputation and have instituted a régime of careful nursing after operation. The patients are operated upon under spinal anesthesia and, in order to maintain the blood pressure, an intravenous infusion of blood or fluid is maintained during the course of the operation. A simple circular amputation above the knee is used with minimal trauma to the tissues. After operation the patient is placed on a Balkan frame and is encouraged to "help himself" to change his position with the aid of a "trapeze." If incontinent, he is placed on constant drainage. If there is any possibility of infection, the sulfanilamide used before operation is continued for several days afterward. The incision is closed without drainage.

Silk has been used as suture material in all our cases. The dressing is not removed for 8 to 10 days, and during this time firm pressure on the stump is maintained with an elastic bandage. After 2 weeks the patient is allowed out of bed, and walking with crutches is then instituted. With the use of this program it has been possible to perform major amputations for gangrene on *20* patients in the past 4 years with but *2* deaths. This mortality of *10 per cent* compares favorably with figures given in the literature.

In conclusion, I should like to emphasize again the importance of considering the balance between blood supply and tissue needs in patients with peripheral arterial disease. Each therapeutic action must be considered not only from the standpoint of its effect upon blood supply but also from the point of view of its effect on tissue metabolism.

Treatment of Varicose Veins and Ulcers

John P. Henry, M.D., Pittsburgh, Pa.

I will skip hurriedly over the treatment of varicose veins and ulcers. A little over 10 years ago treatment by the injection method was accepted with widespread approval over the entire country. It was the only effective treatment that had ever been offered these patients, other than the most radical type of surgery. But as our experience increased with the injection method, although patients were getting better and were relieved of their symptoms, we were quick to realize that it was not the solution of this problem. Entirely too many recurrences were taking place. Patients discharged with healed ulcers were returning with their ulcers reopening or forming elsewhere. That evidently was the experience of other clinics throughout the country. Some physicians had advocated ligation of the vein high up, with the hope of taking the back pressure off the thrombosed area, and with the idea that recanalization and re-formation of varicose veins would not take place. It was a vast improvement over the injection method per se, but as our experience increased with this combined method of treatment we found it still was not the answer to the problem.

So this morning I feel that I can point out the reasons for our failure and give a few points which may help you to improve your technic.

As is well known, the venous supply of the leg is divided into 2 large systems, a superficial and a deep system. The deep system is overlaid with muscle which prevents external forces from damaging the vein wall. The superficial system, as its name implies, is covered over with superficial fat and skin.

Heredity is a tremendous factor in the formation of varicose veins, augmented by other factors such as occupational disease, toxemias, systemic infections, trauma, etc. In the past we ligated varicose veins high up, but did not ligate them high enough. Any of you who have ligated veins in women with huge thighs know how difficult it sometimes is to find the saphenous vein through small incisions. Frequently we run into the collateral branches and have difficulty in distinguishing them. In my opinion, before a vein is properly ligated, the femoral vein should be visualized, and the saphenous vein should be tied as closely as possible to the femoral vein well above the branches, for if you should tie below these branches the back pressure of the inferior vena cava will be so great that in a short time these branches which have been left intact will throw out a tremendous collateral circulation and the patient will return with a condition as bad as before treatment.

The second point is that more attention must be paid to the communicating branches. Linton of Boston brought this out very well in the *American Journal of Surgery* in 1937. We may tie off the saphenous vein at the top near the femoral and think that we have done a thorough job, when much to our chagrin the patient may come back with the veins dilating below the ligation point because we have missed the deep communicating branches.

As you all know, the venous blood from the leg is dependent upon the milking action of the muscles of that leg, forcing the blood from one valvular structure to another until it goes up into the abdomen where it is dependent upon the contraction of the abdominal wall and motion of the diaphragm, etc., to force it into the heart. Through heredity, disease, trauma, and other factors these walls lose their elasticity, the valves pull apart, and the blood supply, instead of going up the venous channels, returns downward producing a back pressure which exerts itself against the capillary field. There is a disturbance of normal circulating equilibrium, pressure is exerted against the arterial supply, and the tissue is as a result poorly nourished and reacts badly to the slightest trauma. Oftentimes lesions result without trauma.

In order to bring about improvement in these patients, you must seek out the damaged communicating venous branches, the so-called "blow-out branches," that will put the blood back in the leg below the point that is ligated.

Drs. Ochsner and Horner in New Orleans brought out this simple test. If you will elevate the leg of the patient in the air, put tourniquets on it, and ask the patient to move the leg, you can find the point in which the vein is blowing out, and find the point below that to be intact.

There is a point that I want to emphasize: Dr. Freeman took exception to it last night, but regardless of his opinion I feel that it is a tremendous factor in the treatment of the patient. Patients with varicose veins have flat feet. You show me a patient with varicose veins and I will show you the patient has flat feet. He is an individual suffering from connective tissue weakness throughout the body. Great numbers of these patients complain of backache, visceroptosis, and hernia. I have seen patients come into the hospital with no apparent varicosities, and no great amount of swelling in the leg, but with a so-called hot spot in the limb. At the last meeting of the American College of Surgeons it was my pleasure to hear Dr. Freeman talk on this subject and I was much impressed with his idea.

The hot spot, although nicely explained by Dr. Freeman from a circulatory angle, may also be explained as chronic trauma or strain of tissues. The normal limb is built to take the weight-bearing point somewhere between the malleoli, but the limb when thrown out of proper posture causes the weight-bearing line to change to an abnormal point. So one can certainly get the same sort of reaction with chronic strain over a long period of time. I have had the pleasure of watching some of these individuals get better by correcting the posture of the foot alone. The feet of some of the older patients cannot be altered by any means; they have been adamant for years. On the other hand, there are patients in whom the disturbance will lend itself nicely to a correction. And I believe that no patient being treated for varicose veins or ulcer is properly treated until the deformity of his feet is also corrected.

Everyone has his pet solution. I have used them all and have made all the mistakes that it is possible to make. I feel that primarily the safety of the patient should be one's first thought. I had a rather bad experience with one of the new solutions in 3 cases. Severe reactions followed the injections. These patients were pulseless and I thought they were dead. They, however, made complete recoveries (see discussion). Several deaths have been reported, however, with that same drug, for which some patients have an idiosyncrasy. Since then I use varisol almost exclusively and find it safe.

I would say, in summing up, ligate the varicose veins well above the collateral branches, tie off the communicating branches as closely as possible for you to discover them, correct the posture of the limb, and follow the treatment with proper injection of the remaining branches, choosing any solution you wish. Perhaps you have found one that has worked better than anything else in your hands.

Not all cases need to be ligated, but the question as to which should be ligated and which should not will have to be answered. When you see the patient before you and have had a little experience with recurrences, you will be able to answer that. The criterion I use is this: If I can palpate the blood vessel above the knee and I find that the vessel is of moderate size, I ligate the vein. However, many patients will consult you who do not need ligation.

Question: Is there regeneration of sensation after nerve crushing?

Dr. Freeman: That takes place in many cases by this means: The nerves are crushed in the lower third of the leg and the muscles paralyzed are the intrinsic muscles of the foot which will cause a weakness of the foot, but the patient is kept from walking, so that doesn't matter much. The sensation has always returned even though delayed occasionally for as long as 9 months, but at the end of that time it is perfectly normal.

Question: What are the effects of nicotine on the peripheral vascular system?

Dr. Montgomery: The amount taken in an ordinary cigarette, about a milligram, will cause a little rise in blood pressure, some vasoconstriction in nearly every individual, although in about 20 per cent it has no effect on this, also a slight increase in pulse rate.

Question: What is the risk of added circulatory disturbance when nerves are blocked by surgical means, aside from the loss of sensory warning?

Dr. Freeman: There is always a real chance of interfering with the collateral circulation in doing a nerve block. With a small incision, careful technic, special protection of the edges of the wound, and not too much looking around for the nerve, that will be minimal. We have so far not observed any gangrene occurring immediately after the nerve block which would suggest that the circulation had been interfered with.

Question: How about the injection of veins above the knee?

The Chairman: It is safe to inject veins in the lower third of the thigh. I personally do not care to go much above that. Our chief at home has asked me to see several patients of his who had these grape-like dilated veins—cases which he thought he might have to operate upon, with possible rupture and hemorrhage following. I injected 3 of these cases for him with rather satisfactory results. I think injection would be successful anywhere below the junction of the lower and middle third of the thigh.

Question: Were those cases which had severe reactions the vagotonic type? If you have the patients stand up, they are often in a state of shock before you start. Is it a good thing to inject a patient of that type?

The Chairman: The patient who stands out most vividly in my mind is a woman whom I had injected with other solutions before I began to use the one solution that I always use now. She had been given 3 or 4 injections, was rather a phlegmatic type, and not worried about the treatment. She went out feeling fine apparently and about 10 minutes later I was called to the emergency room. I found the woman with a bleeding face and a more or less contused nose and forehead. She had gone to the street to wait for her son to come with the automobile to take her home and had fallen. She was pulseless, the skin moist and clammy. We put her to bed, gave antishock treatment, and by morning, except for a big bruised nose, you would not have known anything had happened.

Another case was a Sister of a religious order who was definitely the type that you describe—a nervous, apprehensive, jittery type of individual. I injected her leg and she went into the same picture of shock. My associate, Dr. Harold G. Kuehner, uses monolate in large quantities, gets good results and likes it, but I never use it.

Question: What about the treatment of straddling emboli?

The Chairman: I have seen several cases in this past year in which Dr. Freeman has had extraordinary results.

Dr. Freeman: In considering saddle emboli which, as you know, are thrombi that have broken off, either from the wall of the heart itself or from the auricular appendages, and that have lodged at the bifurcation of the aorta, there are 2 forms of treatment: One is to remove the embolus, and the other to attempt to tide the patient over until collateral circulation develops. If the condition of the patient permits, and it is within 6 hours, the embolus should be removed no matter whether it is at the bifurcation of the aorta or more distal, down to the femoral artery. More distal than the femoral artery is seldom successful because the vessels are so small, but I think that every effort should be made to remove the embolus since even though the collateral circulation becomes established it is not as effective as a normal circulation. But if the embolus is to be removed, the patient must be operated upon within 6 hours.

If the embolus cannot be removed, it should be remembered, in the first place, that it is not actually the embolus which produces gangrene; it is the thrombosis that occurs distal to the clot which occludes the collateral channels. Every effort should be made to prevent this thrombosis. Heparin is now available and if the patient is given 10 to 15 c.c. of this preparation in 1000 c.c. of glucose or saline every 12 hours by continuous intravenous therapy, it will prevent the blood from clotting. The clotting time should be kept up to about 12 to 15 minutes. Heparin has been widely used at the Toronto General Hospital with successful results. Even if the clot is not removed, use the heparin. If the patient is operated upon, as soon as the clot is taken out, the artery should be flushed with a little heparin, and as soon as the artery is sutured, heparin should be started since otherwise thrombosis will take place at the site of the suture.

As to the conservative treatment of an embolus, all of the medical measures which Dr. Montgomery has emphasized should be used and, above all, suction and pressure treatments, given frequently, will supply just that extra impetus to the blood which may tide the patient over. Once the flow has started, the oscillating bed will keep it going. Ochsner has recently suggested paravertebral injection of alcohol into the region of the sympathetic ganglia to prevent vascular spasm. We have used this treatment on all cases of acute arterial occlusion in the past year with gratifying results.

Question: What drugs are of value for assisting in the relief of vasoconstriction? Are there any drugs or anything other than heat that would assist?

Dr. Kramer: We haven't many drugs that will overcome vasoconstriction. One of the main ones, papaverine, has been discouragingly commented upon by Dr. Freeman. Wright has maintained that this drug does not have the effect claimed for it. However, I feel that it is beneficial in these cases. Papaverine was first used in Germany for embolic occlusion; good results were reported. Papaverine hydrochloride is best given in doses of one-fourth to one-half grain intravenously and may be given every 4 hours in acute cases. I have noticed at the bedside that, when properly administered, papaverine can produce a rise in skin surface temperature. I feel that it has therapeutic value. It may not work in every case, however.

Barbiturates are also valuable. They will be of benefit particularly in those cases where the vasoconstriction may be attributed to nervous phenomena or strain.

Mecholyl (acetyl-B-methylcholine chloride) is a valuable remedy in combating vasoconstriction. It is best given by iontophoresis or ionization. It may be given orally as well.

The Chairman: Will Dr. Stroud give his opinion on the use of heparin in acute vasocoronary thrombosis?

Dr. Stroud: I hope no one will give me heparin if I ever have coronary thrombosis. It has been suggested by Dr. Crile and others of Cleveland that if a patient comes to you with what you believe is a developing coronary thrombosis, and yet the electrocardiogram is normal, and the patient is started on heparin, it may prevent the thrombosis from closing the coronary vessel. I have seen no reports of such cases in the literature. It is very difficult to decide when a thrombosis is developing in a coronary vessel, but perhaps as time goes on some cardiologists will be able to demonstrate that they have been able to prevent a thrombus from developing.

Question: What suture material do you recommend in tying off varicose veins?

The Chairman: That subject was much discussed at the round table of the American College of Surgeons. Some individuals, particularly through New England, advocated the use of steel wire. For the high ligation I prefer No. 1 chromic catgut and use it double. The second suture I put through the vein and tie it, using anything below there. If it should slip off, it doesn't make much difference from there. The more superficial the ligation, the greater the tendency to slough if a slowly absorbing suture material is used.

Question: What solution is used in varicose veins?

The Chairman: I like Abbott's varisol. I use it almost exclusively and believe it is safe in almost anyone's hands.

Question: What is the status of intermittent venous occlusion?

Dr. Freeman: We have not used intermittent venous occlusion very much because we are especially well equipped with pressure apparatus, and it has been quite clearly demonstrated by Dr. Landis that with its use the blood flow is increased in normal individuals. It has also been demonstrated in a fairly large series of cases, by E. B. Allen at the Mayo Clinic, that the intravenous circulation does not increase the skin temperature and blood flow. That does not mean that it is not of use, but at the moment it does not increase blood flow measurably; also, it is quite conceivable that the distention of the venous outflow can increase back pressure. The apparatus is easily portable. The general reports in the literature on the final clinical results are about equally favorable with the back pressure therapy results. We collected all the data on this, consisting of 15 or 20 papers, and the results were very similar.

Question: Is hypertonic saline intravenously of any value?

Dr. Kramer: Hypertonic saline solution was one of the early measures used for the treatment of Buerger's disease. Sodium citrate was given with the hope of lowering the viscosity of the blood and permitting it to go through the narrowed lumen of the vessels. Later Samuels and Silbert suggested hypertonic saline solution. Samuels was favorably impressed and used it in preference to the more modern methods of physiotherapy. Silbert was likewise partial to this form of therapy. In a recent report he said he was able to obtain a rise in muscle temperature as well as skin temperature with hypertonic saline solution. Personally, I also employ intravenous therapy. I think it has its value. I may not be as optimistic about it as some of the authorities, but will use it in conjunction with the more modern methods of treatment such as pavex, periodic venous compression, and the oscillating bed.

I believe that intravenous injections are particularly valuable to those who are unable to procure more elaborate and expensive forms of treatment. However, the injections can be combined with the usual procedures outlined for these cases and will help to thwart the development of complications.

Question: I am interested in a simple test that can be done without any special apparatus. What is the particular value of the test which consists of stroking the patient's arm or wrist and then putting the arm down and stroking it? Also, why did they wait so long before occluding the radial artery?

Dr. Montgomery: That test was performed in that individual because the ulnar pulse could not be felt. It is sometimes of great diagnostic significance, because if the pulse is lost here and not anywhere else the patient is more likely to have endarteritis obliterans. The test consisted simply of raising the hand and occluding all of the blood flow, and then holding it a little while so that the reactive hyperemia resulting would be sufficient to show well in a photograph. If some one held my radial pulse, the blood could flow only through the ulnar artery. In this individual it flowed in one hand and did not flow in the other. The method of stroking it is done only to actually expel the blood.

Dr. McLaughlin: I would like to disagree with Dr. Kramer on one point. I do not feel that Buerger's disease is the great problem, and if we are to advance in the future, we really must brush aside that concept. On the other hand, I do wish to congratulate him because I think he has sounded a keynote when he says that endarteritis has been more or less forgotten. It is my feeling that in a great many instances frost-bite has instigated processes that go on to occlusion of the vessels in later years. I also think that one pathologic point has been more or less neglected, namely, that changes do occur in the outer coats of the vessels. It has been demonstrated in certain of our clinical centers that in coronary occlusion there are preliminary emboli or thromboses of the small vasa vasorum which later lead to occlusion of the artery itself; that is, the vessels supplying a coronary artery are occluded before the artery itself is actually occluded. I believe that further pathologic study lies along that line, and it will probably be found that many of the pathologic lesions are accompanied by occlusion of the vessels in the vasa vasorum. The general pathologist is many years behind on the problem of recognizing vascular conditions.

It has been most happily brought out that the factor of spasm is practically the only one that we can hope to control in peripheral vascular disease. I have been trying to do that by repeated blockage of the sympathetic ganglia, using novocain usually, and having the patient come to the dispensary once or twice a week. We know by the temperature readings that we have gotten our reactions. Of course, we have demonstrated previously where the possibility of that reaction exists.

It has been very well pointed out that attendant conditions, especially orthopedic ones like flat feet, can often cause the symptoms that varicose veins are blamed for. A few physicians do not take the pains to explain to the patient that these other conditions are causing the trouble, and at the end of treatment, with the symptoms still persisting, they will be credited with doing a very bad job.

In regard to the technic of ligation, I like to ligate all of the branches which join the saphenous vein just before it enters the femoral vein, and divide them. I ligate and divide just as close to the femoral vein as possible. As to the communicating veins, I like to use the Ochsner procedure of high-low ligation and injection distal to both points. I have adopted Ochsner's newer "fad," if you will, of using ordinary cotton that can be bought on the spool at the drygoods store, and find it very satisfactory.

The Chairman: Dr. Kuehner, would you like to make any comments?

Dr. Kuehner: I believe that all of the essential points have been pretty well covered. The only question that arises in my mind is with reference to Buerger's disease. It has probably been too much emphasized that it is a disease of the extremities, and it might be well to point out that it is essentially a systemic vascular disease.

Question: How is the multiple tourniquet test done?

The Chairman: We have the patient lie on his back and extend the limb up in the air, and then we place the tourniquet on the limb, the patient is raised up, and we study the leakage of the blood.

Dr. Kramer: I hope I was not misunderstood. The only reason I mentioned Buerger's disease is because it is one of the diseases we do not want to overlook. As in fevers, we consider typhoid fever one of the most common.

I should like to ask if there have been any mishaps or untoward effects from injection into the lumbar region. I see it is being used more and more for phlebitis and for testing.

Dr. Freeman: I have been doing many injections into the lumbar region for diagnostic purposes. In the patients on whom I have done a novocain block, a fairly extensive one all the way from the eleventh thoracic vertebra down to the third lumbar vertebra, that is, using 4 needles, in only about 10 per cent of the cases has there been a reaction (drop in blood pressure, pallor, sweating, and faintness). The patients were all lying down of course.

DR. McLAUGHLIN: I would like to add that sometimes there are mechanical dangers in this procedure as soon as a long needle is introduced into the region of the aorta and vena cava. I am sure I have punctured the aorta and vena cava about 12 times. I do not know anything that would give as free a flow of blood back into the syringe. I have had a fine-gauge (21) needle made, which is also quite flexible, and when I do get into the large vessels, no harm seems to result. I withdraw until I am out of the vessels, and then go on with the injection. One patient had backache and had to spend an afternoon in bed; otherwise no untoward effects were noted. These have been ambulatory patients.

QUESTION: How much novocain do you use?

DR. McLAUGHLIN: Twenty c.c. of 1 per cent novocain divided and injected at 4 sites.

DR. MONTGOMERY: At the meeting of the American Heart Association last spring the Section on Peripheral Vascular Diseases had one-half of the whole program. They dogmatically decided that the diseases of this group were the diseases of the total vascular system except of the heart. Whether they will do anything in the future relative to dividing the nomenclature, I do not know. We have to know the whole circulatory system, and certainly a part of our activity as physicians and consultants will be to deal with conditions that are not necessarily below the knees.

WOMAN'S DEATH IS ATTRIBUTED TO PERMANENT WAVE SOLUTION

The death of a young woman from acute hydrogen sulfide poisoning as a result of absorption through the scalp of the substance which was contained in a heatless permanent wave solution is reported by Allen H. Bunce, M.D., Francis P. Parker, M.D., and George T. Lewis, Ph.D., Atlanta, Ga., in *The Journal of the American Medical Association* for Apr. 5. The death occurred within a few minutes after the permanent wave treatment had been started.

In their report of the case the 3 authors say: "On Mar. 19 a healthy young married woman, mother of 3 children, drove her car, accompanied by a woman friend, from her home to Atlanta—a distance of 40 miles—where she had an appointment for 10:30 a.m. at a beauty shop for a heatless permanent wave. She arrived a little late, had her hair cut by the proprietor, an oil treatment, and her hair prepared for the heatless permanent wave.

"Her friend went by the beauty shop about 2:30 p.m. She told her friend to go to a movie or to do anything else she had to do, since the treatment would require more time than she had anticipated. A few minutes later, after the preliminary preparations had been completed, the treatment was started by a trained operator. He had planned to continue it for 7 minutes. The procedure consisted in spraying the wave solution through a closed circuit of tubes into a rubber cap which had been sealed tightly over the head and covered all the hair, which had been previously wrapped in rows on curling tubes.

"The operator had been spraying the solution for about 4 times a minute for about 3 minutes when the patron said, 'Does this ever make one feel faint?' These were her last words. The operator stopped the treatment, applied the neutralizing solution, and called for help. A physician was summoned, an ambulance called, and artificial respiration begun, since the patron had turned a dark purplish. The physician and the ambulance arrived quickly. She appeared dead, but was rushed to Crawford W. Long Memorial Hospital, where she was pronounced dead on arrival about 3 o'clock.

"One of us had examined and treated members of the family for several years. The patient, aged 39, had had a complete physical examination, roentgen examination of the sinuses, chest, and abdomen, and analyses of the blood and the urine some time previously. None of these showed any gross abnormality. She had a physical checkup very recently, at which time she appeared to be in excellent health."

Examination of the victim's head showed numerous small hemorrhagic abrasions covering almost the entire scalp. Commenting on the postmortem examination, the 3 men say, "The changes seen at autopsy were those compatible with the presence of either a circulating toxic substance or profound anoxemia or both. Chemical examination of the blood revealed strong evidence that the material applied to the patient's scalp had been absorbed and was present in the circulating blood. Furthermore, the evidence points to the probability that the absorbed substance was either hydrogen sulfide or ammonium sulfide.

"The rôle of the destroyed areas of the scalp is uncertain. The presence of such lesions would certainly facilitate the absorption of such material as previously referred to. It cannot be determined from the examination whether the application of the curling solution produced the areas of destruction or whether they were there before the treatment.

"Finally, both the clinical course shown by the patient at the time of death and the pathologic changes seen at autopsy were identical with those occurring in reported cases of acute poisoning with hydrogen sulfide. On this basis the opinion is rendered that the patient died of acute hydrogen sulfide poisoning as the result of absorption of such material through the scalp."

The authors say that the examination of the curling solution used on the patient, labeled "Willat Wave De Luxe Curling Solution, Heatless Permanent Wave Company, Distributors, San Francisco, Calif.," revealed among other things that the solution was composed largely of ammonium sulfide (hydrogen sulfide and ammonia proved by laboratory test).

In a communication subsequent to receipt of their report, Dr. Bunce states that the "Food and Drug Administration have officially confirmed our findings that the wave solution may be absorbed directly through the skin in poisonous amounts."

The Medical Officers' Reserve Corps is prepared for all-out emergency. See Dauphin County Society report, page 1058.

A Survey of Dysmenorrhea in a Group of Student Nurses and the Medical Treatment by Means of Benzedrine Sulfate

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IN 1937, before the surgical section of this society, here in Philadelphia, we presented a paper entitled "An Office Procedure for the Treatment of Primary Dysmenorrhea." That procedure consisted of a gradual dilatation of the cervix by means of sounds. In that paper the history and the various theories as to the causes of dysmenorrhea were elaborated upon and, consequently, will not be discussed in this paper. At that time we were convinced that hormone therapy and medical treatment were both inadequate in the treatment of primary dysmenorrhea and were very unsatisfactory and greatly overrated. Since that time we have been privileged to make a very extensive survey on the incidence of primary dysmenorrhea in a large group of student nurses. Following this survey, we decided to treat these dysmenorrheic nurses with one of the various new antispasmodic drugs for which the literature in the past year has claimed so much. Obviously, such an experiment, in all fairness to the various manufacturing houses, would require a large number of subjects and a much greater length of time than we had available. For that reason we decided to use but one drug every 6 months.

The first preparation which we used was benzedrine sulfate, manufactured in Philadelphia by Smith, Kline & French Laboratories. In order that the manufacturing firm would be satisfied as to the modus operandi and the results obtained, we extended an invitation to the research department of the firm to visit the hospitals, consult the directress of nurses, and examine the charts. In order that the personnel directly concerned with the experiment, such as the directress of nurses of each institution and her assistants, might become acquainted with the posology and the action of each drug, we secured from the manufacturing firm a protocol with the posology and side action, idiosyncrasies, etc., of benzedrine sulfate. The representative of the manufacturing firm discussed the dosage and gave valuable instructions to the personnel on the action of the drug. I might say that the firm also made placebos for us of lactose, similar in size, structure, and shape to the benzedrine tablet itself. Each training school, throughout the experiment, used the lactose placebos on the very nervous, high-strung girls. The reasons for this were twofold: The first one was that benzedrine sulfate is contraindicated in high-strung people, and the second reason was that we were curious to see whether or not the hysterical element had a bearing on dysmenorrhea.

Mode of Study

In order that this study might be conducted in a manner as nearly scientific as possible, it was necessary that we divide dysmenorrhea into various groups, so that a distinction could be made between the mild, moderately severe, and severe types of dysmenorrhea. It would not be fair to classify the girl with mild dysmenorrhea, suffering with but a few cramps, in the same category as the girl with severe dysmenorrhea, unable to work, confined to bed, and in a great deal of pain.

The old classification of mild, moderate, and severe dysmenorrhea can be confusing, because the moderate group in that classification will contain a large number of mild cases in one training school while in another training school the moderate group might contain a large number of rather severe cases. We felt that we should add another classification in order that the distinction between mild and severe cases would be gradually reached, and we therefore subdivided the moderately severe ones into 2

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groups, making in all 4 types. We felt that in this classification a girl with moderately severe dysmenorrhea would not class herself as the severe type, and the girl with Type 1, or slight dysmenorrhea, would not classify herself as a moderately severe type.

We made a personal appearance in each training school, explained the various types as were listed in the menstrual chart (Chart 1), told the girls the classification was purely experimental and not scientific, and asked them to run a 3-month menstrual chart, including the months of January, February, and March, 1940. We wanted to study dysmenorrhea in more than one month and would not consider the chart unless the patient complained of dysmenorrhea in 2 out of 3 months. We were also eager to see whether or not the patient with dysmenorrhea, continually on her feet, as our student nurses are, would have a longer menstrual cycle than the girls who are free from menstrual cramps. We found that it made a slight difference as far as the menstrual flow itself was concerned, the average number of days being between 3 and 5 in normal cases and, as a rule, in dysmenorrheics the period lasted one day longer, but this was not positive in every case, even in some of the Type 4 cases who, on occasions, menstruated but 3 days.

In all, we were able to contact 505 nurses. Of that group, some did not turn in the charts, others reported but one month, and subsequently we found ourselves with 366 nurses who completed the charts and co-operated in every way. Of that group of 366 nurses, 191 reported dysmenorrhea in one of the 4 types. Fifty-two and one-tenth per cent of the reported cases were sufferers from dysmenorrhea in 2 months or more of the 3 months' study. One hundred seventy-five stated that they had no symptoms and were free from dysmenorrhea.

TABLE I

QUESTIONNAIRES COMPLETED FOR JANUARY, FEBRUARY, AND MARCH, 1940

Total responses	366
Number with dysmenorrhea of some type	191
Number free from dysmenorrhea	175
Percentage of student nurses with dysmenorrhea	52.1%

Following the conference between the training school authorities and ourselves relative to the action of benzedrine sulfate and its dosage, we drew up a routine which we asked each directress to follow. At the request of the manufacturing firm, we started the girls on an initial dosage of one-half tablet or 5 milligrams with the directions that they were to return in 2 hours for another tablet. This procedure was followed at the request of the manufacturing firm, as they were eager to see whether or not any of the nurses might develop any untoward results or idiosyncrasies. In 2 hours the nurses were administered 10 milligrams of the drug with the request that they return in 4 hours if no untoward results occurred and, if they still complained of cramps, another pill was administered.

It was our experience that if a girl failed to improve with 10 milligrams, a larger dosage, as a rule, would not benefit her. It is interesting to note that we had in all 17 girls who refused to take any more than one-half tablet of the

CHART 1

MENSTRUAL CHART

JANUARY

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY

			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

MARCH

			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Please place a ring of red ink around the first and last day of your period.

Dysmenorrhea is graded into 4 types:

TYPE 1.—Mild cramps which are uncomfortable but not incapacitating.
TYPE 2.—Stronger cramps with headache and sick stomach.
TYPE 3.—Stronger cramps with headache, sick stomach, and backache, and able to work.
TYPE 4.—Severe cramps, with or without headache, which compel you to remain off duty, and which may or may not confine you to bed.

Normal.
Dysmenorrhea 1 2 3 4.
PLEASE CHECK: NORMAL OR TYPE IN RED INK.

drug. In 67 girls in this group 15 milligrams of benzedrine sulfate was used; the balance varied between 20 and 40 milligrams, which high dosage was administered to some of the Type 4 cases.

TABLE II

NUMBER OF DYSMENORRHEA CASES GROUPED AS TO TYPE

Type	*Cases*	*Percentage of Cases*
Type 1	89	46.6%
Type 2	76	39.8
Type 3	17	8.9
Type 4	9	4.7
Total	191	100.0

Results of Benzedrine Sulfate Therapy

Of 191 girls in this group with dysmenorrhea, 32 failed to continue the experiment or took only one-half tablet and through fear of the drug would not continue. We had 159 who completed the survey for 6 months. Of this group we had the results shown in Table III.

TABLE III

EFFECTS OF BENZEDRINE SULFATE ON DYSMENORRHEA

Type	*Total Number*	*Improved*	*Not Improved*
Type 1	68	47	21
Type 2	66	42	24
Type 3	16	3	13
Type 4	9	1	8
Total	159	93	66

In analyzing the results in Table III we find that in the first 2 types we have 68 girls in Type 1 and 66 in Type 2, or 134 girls in Types 1 and 2, by far the largest group, leaving only 25 in Types 3 and 4. Of the combined Types 1 and 2, we had 47 improved in Type 1, and 42 improved in Type 2, or 89 in these 2 types improved, with 45 in both types not improved. We could say this—that out of 134 girls with mild and very moderate dysmenorrhea, 89 or 66.4 per cent were definitely improved on small doses of benzedrine sulfate. We could also say, by the same token, that the combined Types 3 and 4, moderately severe and severe, totaling 25 cases, showed 4 improved and 21 definitely not improved, or 16 per cent of this group improved with 84 per cent definitely not improved. The conclusion that we must draw from this table is that benzedrine sulfate is an excellent drug in the treatment of mild or very moderate cases of dysmenorrhea, while in moderately severe or severe cases of dysmenorrhea, benzedrine sulfate in a majority of cases is of no use.

Conclusion

It was not our purpose to discuss the toxicology or the various side effects of benzedrine sulfate as we observed them in this study. We felt that we were concerned primarily with the results obtained from the drug in dysmenorrhea, and we were also conscious of the fact that our small group could by no means serve as a cross-index to the various clinical manifestations that a drug such as this one might demonstrate. However, a definite conclusion in our opinion must be formed as a result of the action of benzedrine sulfate in 4 grades of dysmenorrhea.

We can definitely say that the drug does not seem to be an antispasmodic to the uterine muscle in severe types of dysmenorrhea. When we make this statement, we must assume that severe dysmenorrhea is caused by a spasm some place in the uterine or cervical musculature. We can convince ourselves that the beneficial effects obtained were the results of the drug itself on the general make-up of the individual. A change of mood, which is common to benzedrine sulfate takers, was noted throughout the entire experiment by the nurses. They all demonstrated expanded confidence, mental stimulation, and extreme optimism. Most of these girls stated that they felt well while they were taking the drug, and that they were able to work all night in the wards and still find themselves very alert in the morning, showing no signs of fatigue. The exhausted nurse, whether she has dysmenorrhea or not, is picked up by benzedrine sulfate, and stimulated to a marked degree. Whether or not this stimulation is a benefit, or whether it will prove to be a very harmful habit-forming drug, remains to be seen.

A few of our girls reported tachycardia and palpitation, and some of them noticed an irregular heart action with occasional extrasystole or sinus arrhythmia manifestations; no gastro-intestinal symptoms were complained of. We had no acute poisoning and no deaths. The greatest complaint registered was a large number of cases of delayed desire for sleep. We are unable to report the number of cases of delayed sleep because we did not stress that part of the program. Habit-forming and tolerance to benzedrine sulfate or to the side effects of the drug cannot be reported on by us because of the limited time in which we used the drug and because we feel that we have not had enough experience with it.

Opinion

1. In mild dysmenorrhea, benzedrine sulfate in small doses is an excellent drug. Its bene-

ficial results seem to be chiefly from the stimulation that it gives to the tired or worried patient, and also from the change of mood that is so characteristic.

2. In severe dysmenorrhea, the kind that we gynecologists and obstetricians are so anxious to help, benzedrine sulfate is of very little benefit.

3. Benzedrine sulfate is a powerful drug, which may be habit-forming. Its use should be governed by a physician, and in our opinion it is no drug to which the public should have full access where and when they will.

A SCHOOL OF DENTAL MEDICINE

In June, 1940, Harvard University announced the proposed transformation of the Harvard Dental School into the Harvard School of Dental Medicine. Under this plan, men seeking to enter dentistry will register in both the School of Dental Medicine and in the Harvard Medical School. At the end of 5 years they will receive both the M.D. and the D.M.D. degrees. They will thus be both medical students and dental students.

There are two points about this plan which should be considered here. First, what is the reason, if any, for suggesting that men planning to enter dentistry should have medical training in addition to dental training? Second, if it can be shown that both types of training are desirable for these men, is the proposed plan a good way to attain this objective? Clinically or physiologically speaking, it is impossible to separate any part of the body from the other parts and unwise to neglect or minimize the importance of general factors in their effect on those reactions to injury which constitute disease. There is a wholesome crumbling of barriers between departments in schools and hospitals and a useful extension of co-operative undertakings in the care of patients, the instruction of students, and the prosecution of research. The growing appreciation that, while specialization is useful, isolation is dangerous is shown in the changing attitude toward special hospitals. It is now widely accepted that such hospitals are usually better as special departments of general hospitals than as segregated institutions.

The course at Harvard which is proposed as a basic preparation for dentistry is to include, essentially, the basic course now given in the Medical School as a preparation for medicine. In planning the course it has been carefully kept in mind that this biologic training, this basic medical experience, is to underlie and supplement and not to overlie and supplant the technical preparation necessary for immediate remedial intervention in dental disorders. What is desired to train is an individual competent to deal, from the point of view of reparative and restorative procedures, with the dental problems of his patients and to provide this individual with such a basic experience that he can take advantage of certain opportunities now existing in the field of dental medicine. These opportunities include, in addition to the general practice of reparative and restorative dentistry, teaching, research, special types of practice, and public health. There is an opportunity for the study of dental disease by men who have a first-class training in dentistry and a better biologic and medical background than is given by any existing dental school. Accordingly, men will be admitted to a combined course which will include the essentials of the 4-year medical school curriculum, plus a basic training in dentistry as such. These men will not be segregated, but will be integral members of the medical school classes. The plan makes possible the recognition of certain courses in dental subjects as appropriate training for the M.D. degree and of certain courses in medical subjects as appropriate for the D.M.D. degree. There is already some opportunity for election in the course leading to the M.D. at Harvard. We hope there will be more. At any rate, a certain amount of leeway is permitted the medical student in his choice of subjects. The Faculty of Medicine is rightly prepared to accept courses dealing with oral and dental disease in this elective. This seems to me a cordial co-operation in the joint effort toward a closer relationship between medicine and dentistry. It is not a lowering of the standards of medical education, nor can I see how any one, least of all dentists with their first-hand knowledge of the relations of oral disease and general health, can question the validity of an appropriate amount of work dealing with oral disease as part of the qualification for a medical degree. The presence in the class of a considerable number of men who have a deep interest in dentistry, the responsibility on the teachers in the medical school of remembering that the teeth and jaws are actually part of the human body, are calculated to improve rather than to depreciate the medical education of all the students in the Harvard Medical School.

The dental training of these candidates for the two degrees will not be concentrated at the end of their course, but will be scattered throughout the 5 years, increasing in amount from 5 per cent the first to 87 per cent the final year. Special opportunities will be developed in hospitals and clinics for new forms of clinical teaching in dentistry and medicine as related fields. A group of small, active departments in the School of Dental Medicine will include the Department of Orthodontics, the Department of Oral Surgery, and the Department of Clinical Dentistry. These departments will work in close co-operation and collaboration with the pediatricians, the obstetricians, the anatomists, the biochemists, the surgeons, indeed with all the divisions of the medical school, since all are concerned in this important problem. The purpose of the plan is to train dentists, and they will have opportunity to acquire not only the requisite knowledge but also the requisite skill.

The present plan for the Harvard School of Dental Medicine is not a new idea. The tendency or trend of development of dental education for 25 years has been toward a new and effective relation with other divisions of the sciences concerned with health matters, and perhaps the plan may be described as a recognition of changes which have already taken place in dentistry. The plan has been set up. As an educational experiment, it may be important not only to the future of dentistry but also to the future of medicine. It will not only supply the country with a group of men with a training applicable to the practice and study of dentistry, but we hope it will also result in experience which may be useful in planning the training of men concerned with other special fields of medicine.—C. Sidney Burwell, M.D., Boston, *Jour. A. M. A.,* Apr. 12, 1941.

The Maternal and Child Health Program of the Department of Health

PAUL DODDS, M.D.
Harrisburg, Pa.

I AM glad to be able to speak to this section of the State Society because the maternal and child health program which we have mapped and are now carrying out is of special interest to pediatrists.

You have heard Dr. Shaw speak of the department as your Health Department and I want to assure you that this is not idle talk. The fact is that the medical profession and the Department of Health are working together with greater effectiveness than has been possible heretofore and practical results are evident in the fields of child care, tuberculosis, syphilis, pneumonia, and industrial hygiene.

To indicate how this particular bureau, Maternal and Child Health, and the medical profession are working together, I must take a moment to tell you about the Maternal and Child Health Advisory Committee. This committee was appointed by the Secretary of Health so that the bureau might know at all times what we can do to help physicians in their efforts to improve child health. This committee actually helped to formulate the maternal and child health program and its members have been called upon individually and severally for advice on important matters. Because you will be interested, I will read the names of the pediatrists who are serving on this committee—Henry T. Price, Edward L. Bauer, Carl C. Fischer, Edmund R. McCluskey, Joseph Stokes, Jr., Julian M. Lyon, and Francis T. O'Donnell.

Before I describe the maternal and child health program, you will be interested to hear of some important changes which are taking place in the department as a whole. The Health Department realizes that Pennsylvania is too large for successful centralized health administration and therefore the state is being divided into health districts, each of which will be a health department in miniature. Depending upon population a health district will be composed of one or as many as 4 counties. District personnel will be full-time employees and to each district will be assigned a specialist in pediatrics who will supervise directly the maternal and child health services.

Another important change which has been mentioned by Dr. Shaw is the establishment of a merit system. This meets with approval from all who desire an efficient Department of Health.

In outlining the maternal and child health program, I will point out only the salient features in the program of each of the 5 divisions of the bureau. These 5 divisions are: (1) School Inspection, (2) Dentistry, (3) Nutrition, (4) Midwives, and (5) Preschool.

The Division of School Inspection has 2 main functions—sanitary supervision and medical inspection in the schools. Sanitary supervision is resulting in improved school plants, but medical inspection of pupils has never been successfully carried out in Pennsylvania. Unfortunately the School Law as it now stands requires that every pupil in the schools of Pennsylvania be inspected medically each year. This bureau and the advisory committee feel that this enormous job is both unnecessary and impossible of accomplishment. We favor a change in the School Law which would limit the inspection to certain grades. This would allow careful examinations with follow-up of cases for the purpose of obtaining corrections.

The Division of Dentistry is headed by Linwood G. Grace, D.D.S., who has been identified with the work of the State Dental Society for a number of years and whose broad experience in private and clinic practice makes him especially fitted for this position. We have felt that in Pennsylvania dental education has far outrun remedial dentistry, and an important feature of the dental program is the encouragement of dental clinics for indigent children. It is not proposed to operate state dental clinics, but where a school board or board of health or other tax-supported agency establishes a dental clinic for

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Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

indigent children the Department of Health will supply the services of a competent dentist. There are now roughly 40 dental clinics operating in this way and the number will be increased as funds are available. This practical part of the dental program is meeting with gratifying success.

In the Division of Nutrition we are fortunate to have secured the services of one of the leaders in nutritional education, Mrs. Anna dePlanter Bowes. In recent years nutritional knowledge has increased so rapidly that it may be looked upon as an adjunct to preventive medicine, and in the light of health defense for national defense this knowledge becomes even more important. A large percentage of applicants for enlistment are rejected because of underweight and it is reasonable to suppose that the majority of these are simply undernourished. To combat such conditions in Pennsylvania, the nutrition program, which now reaches lay groups and school children as well as child health centers and prenatal clinics, is being expanded to include the use of surplus commodities for hot lunches in rural schools.

The Division of Midwives is supervising the work of midwives throughout the state. Although the number of midwives is rapidly decreasing, it is important that the 350 who are still licensed be held to certain standards.

I have reserved until last the division which is of greatest interest to pediatrists—the Preschool Division. The state now sponsors 185 child health centers, chiefly in rural areas. In these the state provides nursing service and the services of clinicians and supplies appropriate literature and scientific equipment, while the community is called upon to provide and maintain suitable quarters.

The purposes of our child health centers are twofold: to educate parents in better methods of child care, and to provide continuous health supervision of the well child from birth to school age. Preventive measures, dental care, and nutritional guidance are stressed.

However, corrections are not undertaken in the centers, but where defects are found the parents are referred to the family physician or dentist for treatment. Our studies show that where a child health center is established there is an increase in the number of patients who consult the local physicians. This is a significant observation.

I hope that in the short time at my disposal I have been able to give the members of this section a clearer view of the Health Department's maternal and child health program.

ABSTRACT OF DISCUSSION

JOHN J. SHAW (Harrisburg): I am very glad to say a word for the Maternal and Child Health Bureau of the Department of Health, first and foremost because I believe that the program as constituted now is the proper maternal and child health setup. It probably could be very favorably compared to any setup in the nation.

I believe that the success of this program has been due largely to the support that the Maternal and Child Health Advisory Committee has given to Dr. Dodds and to the bureau at all times and to the personnel that we have picked for the department. I hope that in the future we can look forward to your continued co-operation.

If you gentlemen who are on the advisory committee and the various other persons who have helped Dr. Dodds to make the program what it is will continue that support, I think we would not be boasting if we said that the maternal and child health program of the State of Pennsylvania will be the best in this country.

I want to thank you all from the bottom of my heart for the support that you have given unselfishly and untiringly; I appreciate it more than I can tell you. Without it we would not have gotten started. Even with the best man that could be picked as the director of a bureau—whether the Maternal and Child Health Division, Pneumonia or Cancer, or whatever disease we are trying to control—without your support we could not begin to get started.

You know by this time that we now have a merit system in the Maternal and Child Health Division of the Department of Health. That is as it should be. I have always considered it unwise to have any politics in a public health setup.

There is only one way to keep the personnel in the Maternal and Child Health Division so that this program which you have helped to inaugurate shall be continued. It matters little what happens to me as the Secretary of Health, but it matters a great deal, after we have developed a personnel and have a program of which we are all justly proud, if somewhere, sometime, somebody can be in a position to upset the whole program. For that reason, at the next meeting of the Legislature which is to be in session next January and February, I intend to present a Civil Service Bill for the Department of Health as a whole, of which the Maternal and Child Health Bureau is a part. That Civil Service Bill will provide real Civil Service.

In that way an individual can continue to do good work. The personnel will continue to be of a high type, and a man can rightfully figure that he can choose, if he so wishes, to have a public health career to his liking.

I believe that this is a step in the right direction, and I hope that when this bill is presented, all members of the State Medical Society will do their utmost to help it become a law. It has been favorably received, and much to my surprise a great many of the Senators want to present it, which is a favorable sign.

So, if you gentlemen will continue the support that you have given me in the past, and will lend your aid toward that Civil Service bill, I believe you and I will continue to make the maternal and child health program a better one.

Inflammatory Diseases of the Pericardium

HERMAN W. OSTRUM, M.D.
Philadelphia, Pa.

THE pericardium is a conical membranous sac containing the heart and roots of the great vessels. It lies behind the sternum and between the pleura, its apex upward, its base attached to the diaphragm. It is composed of an outer fibrous coating and an inner serous one; the former is prolonged on the outer surface of the great vessels and becomes continuous with the deep layer of the cervical fascia. The inner consists of a parietal layer lining the inner surface of the fibrous coating and a visceral layer which is reflected over the heart and vessels. The serous portion contains a small amount of fluid for the lubrication of its surface. The transverse sinus or upper recess of the pericardium is produced by the reflection of the serous pericardium from the aorta and pulmonary artery in front and the auricles behind. The oblique sinus or the inferior recess of the pericardium is produced by the reflection of the serous pericardium from the pulmonary veins and superior and inferior cavae to the posterior surface of the heart.

Pericarditis with Effusion

The approximate amount of fluid required to produce cardiac change is about 300 c.c. The roentgen signs of pericarditis with effusion are:

1. The straight or slightly concave contour at the level of the inferior vena cava is replaced in the lateral view by a convexity, backward, because the fluid usually accumulates along the posterior and lower surfaces of the heart. This appearance is noted in the erect posture. When the recumbent posture is assumed, the fluid shifts to the posterior recess of the pericardium.
2. Due to the accumulation of fluid in the transverse sinus there is a shortening of the vascular shadow when the effusion is massive and this is present both in the recumbent and upright positions.
3. The silhouette increases in size, the grooves of the heart and great vessels are filled in, and the contours rounded out.
4. Pulsations at first lose their alternating character and are later replaced by undulation, amplitude of pulsations are diminished, and finally pulsations may cease entirely.
5. Sharpness of outline of the cardiac borders due to the fact that the heart is almost stationary.
6. Clear normal lung fields in the majority of cases.
7. Change of the silhouette with change in position of the patient.

The latter sign is a very important one in differentiating pericardial effusion from large dilated hearts. The large dilated hearts due to myocarditis may assume a water bottle or triangular shape and exhibit diminished pulsations, but the heart configuration does not change with change in position of the patient. The heart is never seen in pericarditis with effusion. The density of the heart is almost similar to the density of the surrounding fluid, and in the few instances where the heart was reported to be visualized in pericarditis with effusion, the bronchial shadows were mistaken for the cardiac borders. The cardiodiaphragmatic angles in pericardial effusion are practically never obliterated. This is due to the fact that the pericardium is unable to distend as much at its point of fixation to the diaphragm as it does above. The removal of fluid from the pericardial sac and its replacement by air has helped us to make a careful study of the pericardium, the size of the heart, the nature of adhesions, the character of the fluid, and the amount of free fluid or thick exudate present.

Tuberculous Pericarditis with Effusion

There are two main types of tuberculous pericarditis with effusion, one the so-called primary tuberculous pericarditis where the lungs are normal and the tuberculous infection in the pericardium is probably derived from the glands in the mediastinum or hilar regions. The second type is the secondary tuberculous pericarditis where there is a definite tuberculous lesion in the lungs and the pericarditis is secondary to the

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Read before the Section on Clinical Laboratory Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

lung infection. It is much easier to recognize the latter, for in pulmonary tuberculosis the heart is usually small, and when an enlargement occurs, pericarditis with effusion is often present. However, in the primary tuberculous pericarditis, the diagnosis is at times very difficult.

We have tried to differentiate the tuberculous variety from the others by studying our patients in various positions and we have found that in the tuberculous pericarditis, due to the fact that adhesions, loculations, and thick exudate occur, often at the base, the cardiac configuration remains almost stationary with no change with change in the position of the patient. In the rheumatic or other types of pericarditis, the change in cardiac configuration is an important finding when the position of the patient is changed. We think that the removal of fluid and the substitution of air helps not only in the quicker absorption of the fluid but also to differentiate the various types. In the tuberculous variety, after a hydropneumopericardium, the base of the heart is almost always filled in with thick exudate or loculated fluid and does not decrease in size after the removal of the fluid and the introduction of air. The nature of the adhesions in the pericardium is usually seen and the size of the heart definitely determined. The fluid is always bloody and is at times loculated, more often in the right side and at the base, and may simulate aneurysms or mediastinal tumors.

Pyogenic Pericarditis

It is important to know that in the study of pericarditis a proper history and clinical and laboratory findings are important. In pneumococcic pericarditis, the history of previous pneumonia or empyema is a very important finding. The cardiac silhouette is similar to that in other types of pericarditis, the pericardium is thickened, the fluid is pussy and green, and the heart is not enlarged unless there is an underlying valvular or hypertensive heart disease.

Pericardial diverticula are not very common and are due to encapsulated pericardial effusion with adherent pericardium. Roentgenographically, there is a localized sharply defined outpouching along the cardiac border. The rest of the heart may be entirely normal. This condition is to be differentiated from mediastinal or lung tumors or aneurysms.

Primary or mediastinal tumors of the pericardium are encountered at times. Effusion takes place early in malignancy of the pericardium and the malignant nature may be entirely overlooked. However, the bloody fluid present, the history of a primary growth, and other signs pointing to malignancy are of great help.

Chronic Contractive Pericardial and Adhesive Mediastinal Pericardial Disease

This disease, sometimes known as Pick's disease or Pick's syndrome, is also described as adhesive pericarditis or mediastinal pericarditis. C. S. Beck recently termed the condition "cardiac compression due to pericardial scar." The condition represents either the sequelae or the end results of a previous inflammation of the pericardium. The etiologic factor can be determined in only a few instances. The fact that the heart does not become enlarged would speak for a tuberculous etiologic factor. However, this is still a disputed point. The pericardium in this disease is transformed into a firm, solid layer, the thickness being between 2 and 26 mm. The pericardial cavity is at times completely obliterated. In addition, the pericardium is adherent to the neighboring organs. It is most prevalent in the third, fourth, and fifth decades. The roentgen signs are based on:

1. The effect of the scar on the configuration, size, and excursions of the heart.
2. On changes caused by adhesions between the pericardial scar and neighboring organs.

In most cases the heart is small, and if the heart is enlarged, an underlying valvular or hypertensive disease is usually found. In adhesive pericarditis the silhouette may have a triangular shape with straight oblique left and right borders. The heart may be globular with arcuate right and left borders, or it may have a mitral or aortic configuration. A helpful sign, if present, is the appearance of calcification in the pericardial scar. Another sign is the unchanged configuration of the heart shadow during the two phases of respiration. Pulsations are either absent or markedly decreased in amplitude. The presence of extrapericardial adhesions and the fixation of the heart are well observed fluoroscopically by turning the patient to the left and right oblique positions. For permanent records, films taken in the postero-anterior view during inspiration and expiration, with the patient lying on either side, are very helpful. The marked flattening of the aortic knob in adherent pericarditis has been described by Dr. E. Friedman. The superior vena cava due to the inflow stasis shows enlargement. One or both cardiohepatic angles may be obliterated by adhesions. Localized pericardial effusion, especially on the right, may be present in this condition. The lung fields are usually clear.

Conclusions

1. Pericardial effusion produces a pear-shaped silhouette resembling a round bottle with a short neck.

2. The main differentiation and diagnostic point between dilated hearts and pericardial effusion is the change of cardiac configuration during changes in the position of the patient and the appearance of the lung fields.

3. Early pericardial effusion may be found by observing an abnormally convex bulging of the posterior surface of the heart.

4. The most reliable method is the daily roentgen examination of the change in size and configuration of the heart within short periods of time. Diagnostic hydropneumopericardium is an important procedure in the diagnosis and treatment of pericarditis.

5. Adherent pericardium produces a small heart, and if the heart is enlarged, it is due either to thickening of the pericardium or to underlying valvular or myocardial disease. The majority of hearts in adhesive pericarditis are triangular or globular, rarely of an aortic or mitral configuration. Cardiac pulsations are usually diminished or absent and the aortic knob is obliterated.

6. Due to the marked thickening and adhesions of the pericardium, the heart becomes rigid and does not change during the two phases of respiration.

7. The most conclusive sign of adherent pericarditis is that calcification in the pericardium is present in only about one-third of the cases.

WHAT MAKES THE "DOC" TICK

In this day of impending upheaval in the status quo, it is interesting to speculate upon the effect our habit of thinking has had upon our present dilemma. Leaders in industry and commerce, the arts and sciences, are all of them slow enough to discard outmoded ideas and to rearrange their thinking to suit the new demands of a changing economy, but there is evidence to suggest that we doctors are slowest of all.

For when we are faced with ample evidence of an impending change, our reaction is apt to be that of withdrawal and negativism.

Our centuries of conservatism and dignified seclusion from the masses have finally produced an individual scarcely capable of group foresight and group action, even in his own behalf. Most of us would prefer to stick our heads deep into the sands of past time, ignoring vital issues, than to attempt to change our age-old individualistic thinking to a modern, farsighted, group effort to protect both ourselves and the public during these present times of change.

Why is the medical mind so unwilling to read the lessons so abundant in our surroundings? Why does it lag so far behind labor, industry, and politics in adapting itself to modern problems? Even though we do not approve of the methods of these other groups or condone their ethics, we must admit their superior flexibility and adaptability in the face of change.

There is no harder task than that of developing a united group action on the part of even one small organization of medical men. This has been demonstrated time and again in our attitude toward various kinds of contract practice and in other fields. Usually we work so individualistically that as a group we are denied the advantages of proposals patently desirable from every standpoint.

Why cannot the various groups within our profession develop a farsighted and united program to assure adequate care for people of all income levels, thereby obviating the need for any program of state medical care? Why cannot each individual doctor see the great power for good of unified action by a group of well-educated, intelligent men and women who have intimate entrée into the homes and minds of all the people? Why cannot the individual and the small cliques within our group have a broad enough vision to see the need for immediate burial, at least temporarily, of all their minor differences for the sake of a strong unified approach to the world at large? Why cannot the component members of each organized medical society be induced to take an active interest personally in the efforts of their society?

It is only by such concerted personal interest that the weight of our own component part of national organized medicine can eventually be added together with other similar small groups to mold effectively a national medical policy along lines which are to the best interests of the doctor and the public he serves.

When one studies the minute, carefully integrated, smoothly working parts of a good watch, it is easy to understand its accuracy and durability.

When one observes the haphazard divergent, non-integrated aims and thoughts of many medical men, one wonders what makes the "doc" tick.—*Westchester* (N. Y.) *Medical Bulletin,* April, 1941.

REALISTIC HEALTH PROGRAMS

Of 17,540 men, ages 21 to 36, in New York City, examined for military duty, 4673, approximately 27 per cent, were totally unfit for military duty.

Defective vision, teeth, and gums accounted for 23 per cent; heart disease, 11 per cent; mental and nervous conditions, 4 per cent. Birth deformities and the results of accidents accounted for many, and neglect due to ignorance, had its great share.

As indicated by the *New York State Journal of Medicine,* with the assembling of all these reliable facts, nation-wide and free from emotional embroidery, the pattern of a realistic health program becomes discernible.

SYMPOSIUM ON DIABETES

Mortality Studies of Diabetes

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BEFORE the magnitude of any disease as a public health problem can be estimated, it is necessary to secure and to study accurate statistics. Regarding diabetes, we should like to know how many people die from it each year and how many of these deaths could have been prevented if adequate medical care had been received and followed during the entire course of the disease. We should like to know how many people have diabetes and to what extent they are able to lead normal lives or are more or less disabled because of the diabetes. It would be of interest also to inquire whether diabetes can be prevented, whether all those who have diabetes can obtain the laboratory studies necessary for the proper control of their disease, and whether all those who should be taking insulin are able to secure it. In this paper I shall discuss diabetic deaths with reference to their significance in estimating the total number of living diabetics and with reference to how many of these deaths might have been prevented.

It has been pointed out by numerous authors that the number of people having diabetes has been steadily increasing. Part of this increase is only an apparent one, as many cases are now diagnosed which formerly were overlooked. The greater part, however, is a real increase. The most potent factor in producing it is the aging of our population. While diabetes may begin at any age, approximately two-thirds of the cases begin at ages over 40. During the 20 years from 1910 to 1930, the portion of our population 40 years of age and over increased from 22 millions to 36 millions—an increase of 63.7 per cent. The portion under age 40 increased from 70 millions to 87 millions—an increase of only 24.3 per cent. Thus, the fraction of our population in which two-thirds of the cases of diabetes begin increased 2½ times as much as the portion in which only one-third of the cases begin.

Diabetes is not a reportable disease. In order to make an estimation of the number of living diabetics, it is necessary to know the number who die each year and to multiply this by the average number of years each patient lived. In 1937, 3176 patients were reported in Pennsylvania as having died from diabetes. In Joslin's experience the average duration of life of fatal cases is above 10 years. The number of cases in Pennsylvania should be above 30,000. The true figure is probably considerably higher. In the first place, as I shall point out later, very many diabetics who die are not recorded as having died of diabetes. In the second place, the average duration of diabetes is probably more than 10 years.

Coma Deaths Preventable

The problem of deciding for statistical purposes whether a diabetic died from diabetes or with diabetes is often exceedingly difficult. Most diabetics, particularly those at the older ages, have other serious pathologic conditions at the time of death. During a 6-year period (1931-1936), 521 patients with diabetes died in the wards of the Metabolic Division, Philadelphia General Hospital. These are recorded in Table I. Four hundred of these 521 deaths, or 76.8 per cent, were due to 4 causes: 59 to acidosis, 131 to gangrene, 106 to the heart, and 104 to pyogenic infections. Postmortem examinations were made in 236 cases. Approximately 67 per cent of the patients had not been seen by us prior to their hospital admission; 13 per cent had been irregular in attendance in the outpatient department; and 20 per cent had been active outpatients. For the ages up to 35, there were only 30 deaths. From age 36 to 50, there were 102 deaths. The heaviest mortality occurred between ages 51 and 65, in which there were 258 deaths. At ages 66 and over, there were 131 deaths.

Read before the Section on Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

Prior to the discovery of insulin, 60 per cent of all diabetics died of diabetic acidosis. It is the only cause of death which is due solely and wholly to the diabetes. Practically all coma deaths should be preventable, and when a coma death occurs the presumption is strong that someone has been careless or has erred, either the patient himself or his family or his physician.

When a diabetic patient is comatose, the mental state may be due to acidosis with no other complication; or it may be due to some other pathologic condition without acidosis, such as apoplexy, uremia, heart failure, or a severe infection; or there may be both acidosis and a severe complication present at the same time. A severe complication is likely to precipitate acidosis in a mild or well-controlled diabetic. Only careful clinical and laboratory studies can establish the relative importance of the conditions present.

In Table I, under Acidosis (A), are listed 32 patients with acidosis who died without any complication. Under Acidosis (B) there are 27 cases which had complications of a severe nature, but not so severe that they would be certain to cause death in a nondiabetic. Such complications were lobar pneumonia, empyema of the gallbladder, erysipelas, gangrene, hyperthyroidism, etc. Under Acidosis (C) are listed 58 patients with acidosis who would surely have died regardless of the acidosis. Such opinion was based either on the overwhelming nature of the disease (carcinoma of the cervix, miliary tuberculosis, acute hemorrhagic pancreatitis, etc.) or on the fact that the patient entirely recovered from the acidosis and died many days later from the complication. These 58 cases have been distributed by signs among the other causes of death. They have been previously reported in detail.[1]

Next to acidosis, gangrene is that form of death the pathology of which is most intimately dependent upon the diabetes for its development. In the Metabolic Division, gangrene is by far the most serious problem. It causes the greatest number of deaths—131 (Table I). It causes the greatest number of hospital-patient days. It is productive of a large amount of permanent disability because of mutilating operations.

Consistent Control Minimizes Gangrene

In uncontrolled diabetes, there occurs an atherosclerosis of that group of arteries in which development of the muscle fibers exceeds that of the elastic laminae. The arteries chiefly affected are the coronaries and those of the lower extremities.[2] There is a gradual thickening of the intima and a diminution in the size of the lumen of the vessel until a point is reached

Table I

Causes of Death in Diabetes

Age	*Acidosis*			*Gangrene*	*Heart*	*Infections*	*Apoplexy*	*Chronic Nephritis*	*Cancer*	*Tuberculosis*	*Miscellaneous*	*Sex*		*Total*
	(A)	*(B)*	*(C)*									*M*	*F*	
0-5	..	1	..	......	.....	......	.....	.....	.....	.....	.....	1	...	1
6-10 ...	..	..	..	......	.....	......	.....	.....	.....	.....	.....	...	...	...
11-15 ...	2	..	1	......	.....	† 1	.....	.....	.....	.....	.....	1	2	3
16-20 ...	1	..	2	......	.....	1 † 1	.....	.....	.....	1 †1	.....	...	5	5
21-25 ...	4	1	..	......	.....	1	.....	.....	1	.....	.....	1	6	7
26-30 ...	2	..	4	......	.....	† 2	.....	.....	.....	†1	†1	3	3	6
31-35 ...	2	2	..	......	.....	1	1	1	.....	.....	1	2	6	8
36-40 ...	4	2	7	†1	2	4 † 5	.....	2 †1	.....	.....	2	5	18	23
41-45 ...	1	2	6	2	1 †1	8 † 5	.....	.....	2	1	3	8	18	26
46-50 ...	3	4	7	11	11	6	2 †1	1	3	1 †3	4 †3	15	38	53
51-55 ...	7	3	8	11 †2	14 †2	12 † 3	5 †1	3	4	1	4	26	46	72
56-60 ...	4	4	10	20 †1	22 †2	17 † 5	2	.....	4 †1	.....	6 †1	32	57	89
61-65 ...	2	7	5	25	22 †2	13	4	5	6 †1	3	5 †2	36	61	97
66-70 ...	..	1	1	22	10 †1	7	3	2	1	2	3	29	23	52
71-75 ...	..	..	5	25 †2	11	6 † 2	1	3	3 †1	.....	3	20	37	57
76	..	..	2	9	5	2 † 2	.....	.....	2	.....	2	6	16	22
Total ...	32	27	58*	125 †6	98 †8	78 †26	18 †2	17 †1	26 †3	9 †5	33 †7	185	336	521

* The figures under Acidosis (C) have been distributed by † signs to the diseases which actually caused death.

where there is insufficient blood supply to the affected part to combat an infection or to maintain the vitality of the tissues.

Deaths from gangrene ought not to occur. In the first place, if the diabetes has been entirely controlled since the onset of the disease, the characteristic arteriosclerosis will probably not occur. In the second place, if the arteriosclerosis does develop, gangrene will not occur in most instances if proper attention is paid to the feet. In the third place, if gangrene does occur in spite of good care of the feet, lives should not be lost if the seriousness of the condition is recognized early and the appropriate treatment instituted at once. It must be emphasized that diabetic gangrene is always serious, much more serious than it usually appears to the physician or the surgeon who has had little experience with it, and that very specialized surgical judgment and technic are required if the best results are to be obtained. In advanced cases the mortality rate is sure to be high. The old saying, "An ounce of prevention is worth a pound of cure," is especially applicable in regard to the complications of diabetes. The cases of diabetes which develop arteriosclerosis and gangrene are the mild ones, which prior to development of the gangrene have not required insulin, but which have been careless about adhering to diet. To prevent gangrene, first keep the diabetes under control every day of the patient's life; and, second, take care of his feet. So far, we may say that many, if not most, of the 59 deaths from coma and of the 131 deaths from gangrene could have been prevented.

In Table I it will be noted that there were 106 heart deaths. Did these individuals live as long as they would have if they had not had diabetes? Would the whole group have averaged an older age at death if the diabetes of each individual had been well controlled during the entire course of the disease? All that can be said is that the average age at death of these 106 patients was 60.5 years. The average age at death from heart disease for white males, U. S. Registration States, 1930, was 66.21 years.[3] These figures would seem to indicate that the fatal heart disease developed nearly 6 years earlier because of the diabetes. In 26 cases, death was due to acute coronary occlusion. In 23 cases, hypertension was noted.

As shown in Table I, the fourth large group of causes of death was pyogenic infections, from which there were 104 deaths. It is well known that diabetic patients are prone to develop infections of the skin and the subcutaneous tissues, such as carbuncles, abscesses, and cellulitis. Infections of the genito-urinary tract are also common. It is difficult to estimate whether infections of the respiratory tract and the gastrointestinal tract occur more frequently in diabetics than in nondiabetics of the same age and of comparable physical condition. The important thing to emphasize in connection with infections in diabetics is that, as soon as an infection occurs, the diabetes is made much worse, and the patient with a previously mild diabetes may soon go into fatal acidosis if the physician is not alert to prevent it. With good management of the diabetes, the mortality rate from an infection in diabetics ought not to be much worse than from the same infection in nondiabetics. A list of the infections which occurred in the 104 fatal cases is presented in Table II.

TABLE II

INFECTIONS CAUSING DEATH

Bronchopneumonia	16
Lobar pneumonia	11
Pulmonary abscess	3
Empyema	1
Mastoiditis	3
Influenza	1
Acute laryngitis with tracheotomy	1
Appendicitis with peritonitis	4
Acute cholecystitis	1
Empyema of gallbladder	1
Acute gangrenous degeneration of ileum and cecum	1
Acute phlegmonous duodenitis	1
Peritonitis (cause ?)	1
Subdiaphragmatic abscess	1
Suppurative pyelonephritis	11
Multiple abscesses of kidneys	5
Abscess of prostate	1
Pelvic inflammatory disease	6
Carbuncle	10
Cellulitis	8
Abscess	7
Phlebitis	2
Infected decubitus ulcer	1
Furuncle of nose with cavernous sinus thrombosis	1
Erysipelas	2
Acute infectious arthritis	3
Acute bacterial endocarditis	1
	104

The incidence of tuberculosis in diabetics as compared with the general population is high. It is especially high in that type of diabetes in which acidosis easily occurs. The prognosis is always serious, but hopeful if both diseases can be well managed. Table I does not represent the entire mortality from tuberculosis, as a large proportion of the diabetics with tuberculosis were treated in the Tuberculosis Division, whereas Table I contains deaths occurring only in the wards of the Metabolic Division. However, tuberculosis as a cause of death is not as great a problem as any of the 4 groups already discussed.

Complete Autopsy Desirable

It is obvious that, when diabetics die, in most instances some other serious pathologic condition is also present. The matter of trying to decide whether the death in a given case was primarily due to the diabetes or to the other pathology is often most difficult. In order to make an accurate estimation as to what was the principal cause of death, we need to know how well the diabetes had been controlled during the whole course of the disease, what the exact physical condition of the patient was prior to the onset of his fatal illness, what his physical and chemical conditions were at entry to the hospital, and to have a careful record of how his several conditions responded to treatment. Most important of all is the desirability of a complete postmortem examination, for it is often impossible clinically to make accurate and complete diagnoses. Even when all the data can be satisfactorily completed, not infrequently there is room for considerable difference of opinion as to what was the chief factor in causing death. We have encountered the following situations and a great many others:

A woman, age 47, was admitted with blood sugar 900, CO_2 23, and lobar pneumonia. She died in 26 hours. Because of the fact that she was out of acidosis for only a few hours before death, we were compelled to regard this death as being due to diabetes.

A man, age 45, was admitted with blood sugar 290, CO_2 22, and lobar pneumonia. He died on the seventh day, his blood sugar and CO_2 having been well controlled for 6 days. This death would seem to have been due to pneumonia. However, it would be possible to argue that most nondiabetics recover from lobar pneumonia, and that this patient died probably because the diabetes and the bout of acidosis materially lowered his vitality.

In the case of a man, aged 58, who was admitted in a state of mental confusion, adequate history not obtainable, with blood sugar 360, CO_2 26, urea nitrogen 50, and congestive heart failure and bronchopneumonia, death ensuing in 48 hours, it was impossible to estimate whether the diabetes, the cardiorenal disease, or the pneumonia played the leading rôle in his demise. He may have been a well-controlled diabetic who had cardiorenal disease, which finally broke down, the bronchopneumonia and the acidosis being events of only the final few days; he may have been a healthy, well-controlled diabetic who was stricken with pneumonia, and the acidosis and the cardiorenal failure were purely terminal events; or he may have been a poorly controlled diabetic, with acidosis playing the leading rôle, followed by cardiorenal failure and pneumonia as complications of the last few hours.

As far as vital statistics are concerned, the Bureau of the Census at Washington and the Bureau of Vital Statistics at Harrisburg would tabulate all 3 cases cited in the foregoing paragraphs as being deaths from diabetes, regardless of whether the attending physician recorded diabetes on the death certificate as the primary or the secondary cause of death. In tabulating deaths where 2 or more causes are present, these bureaus follow the rules which are laid down in the *Manual of the International List of Causes of Death* and the *Manual of Joint Causes of Death*. When diabetic statistics are collected from health departments of individual cities, however, it is found that some of the local bureaus do not follow these rules. Not infrequently, deaths which the Washington and the Harrisburg bureaus would assign to diabetes are tabulated by the local bureaus as being due to other causes. All death certificates are forwarded by the local bureaus to Harrisburg, and copies are sent to Washington, so that the data are identical. At the meeting of this society last year, Strome and Blaine read an excellent paper on "Diabetes Mortality in Pennsylvania."[4] They presented many tables, including one giving the number of diabetic deaths in the cities of Pennsylvania, the figures having been obtained from the U. S. Census Bureau. It is interesting to compare these figures with those supplied by the local bureaus of health for the years 1935 and 1936.[5] In Table III it appears that in some cities there are marked differences between the

Table III

Number of Deaths for Pennsylvania Cities as Reported by U. S. Census and Local Health Bureaus

	1935		*1936*	
	U.S.	*Local*	*U.S.*	*Local*
Allentown	52	25	43	30
Altoona	24	11	30	8
Bethlehem	9	12	12	14
Erie	46	37	34	23
Harrisburg	47	47	50	48
Johnstown	21	20	31	31
Lancaster	30	30	41	41
McKeesport	19	19	21	21
Philadelphia	644	625	596	594
Pittsburgh	191	199	201	207
Reading	41	35	47	35
Scranton	55	56	54	51
Wilkes-Barre	30	30	43	44
Williamsport	33	33	22	5

census and local reports, which can be accounted for only by failure of the local authorities to follow the rules of the *Manual of Joint Causes of Death.* When these rules are followed, diabetes takes precedence over most of the complications of diabetes for purposes of tabulating the cause of death. All coma and gangrene deaths are, of course, tabulated as diabetic deaths. Diabetes, although it appears on the death certificate as only a contributory cause, takes precedence over cardiac and vascular diseases appearing as the principal cause. However, cancer and tuberculosis take precedence over diabetes. The deaths in the infection and the miscellaneous groups are especially difficult to tabulate as being due to the diabetes or to the complication, and competent and experienced tabulators will have differences of opinion about individual cases. In the *Manual of Joint Causes of Death,* 127 conditions are listed as taking precedence over diabetes, but the ones which might most frequently occur in connection with diabetes have to do with cancer, tuberculosis, and accidents.

Deaths From or With Diabetes

It is obvious that vital statistics give us no information as to the proportion of diabetics who die from diabetes and those who die with it, nor can we expect vital statistics to help us solve this problem. The difficulties in connection with the vital statistics of diabetes are rather unique: (1) Diabetes is a very common disease; (2) it usually leads to a fatal termination if improperly treated; (3) it can be completely controlled with adequate treatment; and (4) some other serious disease is nearly always present at death. To tabulate what the attending physician records on the death certificate as the principal cause of death would lead to hopeless confusion, as there would be great differences of opinion as to how identical cases should be recorded. The *Manual of the Joint Causes of Death* has at least the virtue of giving us a uniform method.

Vital statistics do tell us a good deal about how many people having diabetes die each year, but they fall considerably short of collecting the whole number. Of the 521 patients who died in our wards, those which were not tabulated as diabetic deaths in the vital statistics, because a complication took priority in the tabulation, probably number over 100. The exact number would depend on the judgment of the individual tabulator in applying the rules to a score or more borderline cases. If this rate of priority is any indication of that which obtains throughout the state, there would be over 600 deaths from diabetes in Pennsylvania each year which are tabulated as being due to other causes.

A second cause for the failure of vital statistics to reveal the full number of diabetic deaths is the fact that the attending physician often fails to include diabetes on the death certificate, because the diabetes may seem to him to have played little part in causing the death. We believe also that it is likely large numbers of diabetics die without the diagnosis of diabetes having been made. We have seen many cases in which the diabetes has apparently been relatively mild until the onset of a severe complication, at which time the complication obscured the diagnosis of diabetes until the patient had been admitted to the hospital and routine laboratory studies were made. We feel confident that, because of these 3 factors, vital statistics do not record more than two-thirds, perhaps not more than one-half, of the total number of diabetics who die each year; and that, consequently, the usual estimations of the number of living diabetics are considerably below the true figures.

For any city or state to have a high mortality rate from such diseases as typhoid fever or smallpox is a severe indictment of the health authorities, the medical profession, or the voters, or all three. These diseases can be almost completely prevented. But diabetes cannot be prevented except in a limited way by the prevention of obesity. A high diabetic death rate does not imply any criticism. We should not be ashamed that Pennsylvania has the highest diabetic death rate of all the states,[4] at least not until the time comes when diabetes can be prevented or the present practice of classifying diabetes in the *Manual of Joint Causes of Death* is changed. The quality of medicine practiced in a hospital can be rather accurately gauged by its necropsy rate. The quality of medicine practiced in a community may be indicated not a little by the diabetic death rate. A high death rate does not mean that the patients are receiving poor treatment. On the contrary, it means that medical care is available, that the physicians are alert to diagnose the mild cases and those obscured by complications, that they are reporting diabetes on the death certificates, and that the health authorities are properly tabulating the cases.

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ABSTRACT OF DISCUSSION

Belford C. Blaine (Pottsville): The statistics presented by Dr. Dillon are most conservative, and represent the best knowledge on this subject. He has available and has consulted all of the authoritative sources of information on this subject. The statistics in relation to the mortality in diabetes from the various complications represent statistics where the best type of therapy for the care of the diabetic is available. I hope the day will come when these percentages are the percentages of the state as a whole.

Dr. Dillon has presented statistics showing the minimum number of diabetic persons in Pennsylvania. His estimate is most conservative. If the Public Health Survey of 1935 and 1936, embracing 2 million persons, is a criterion, then 3.67 persons per 1000 admit they have diabetes. The population of Pennsylvania is 10 million, which would give us 36,700 admittedly diabetic persons. Dr. Joslin's recent survey of Arizona shows us conclusively that a large percentage of the population of a state may be unaware that they have diabetes. As a part of a state-wide survey of diabetes in Pennsylvania, a number of hospitals where such statistics were available were asked to list the number of deaths due to diabetes. They were asked in addition to list the number of diabetics whose death was due to causes other than diabetes. The latter number was 50 per cent of the number of deaths from diabetes. If Dr. Dillon's figures are thus amended, the figure would be 45,000 active diabetics. This is probably nearer the actual figure. If the number of diabetics admitted to hospitals in Pennsylvania—approximately 7500 in 1936, 8000 in 1937, and 8500 in 1938—are used, and the 10-year span of life applied, the number soars to 80,000. Active diabetics present one problem. This problem is being solved quite efficiently. In general, the reservoir of potential diabetics has been touched only lightly, or not at all. Preventive medicine works in many other fields in medicine, but has slighted the diabetic.

Certainly, the lessons learned so well in the treatment of the active diabetic can be used to advantage, in the field of general medicine and dietetics, in the prevention of diabetes.

Treatment of Diabetes in Childhood

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THE general practitioner finds difficulty in treating the diabetic child because of the instability of the disease in childhood, the variable and indefinite caloric needs of the growing child, the common infectious diseases which frequently complicate childhood diabetes, and the immaturity of judgment and the instability of habit which prevent the child's complete co-operation in his treatment. The problem may become even more complex as the child progresses into adolescence. So, the medical care of the diabetic child is beset with potential emergencies.

To diminish this element of emergency the physician must first assure himself that the child is adequately standardized. The unstandardized diabetic child, whether his be a newly discovered or a neglected case, will need hospital care for a period of one to several weeks. Standardization will be carried out much as for any diabetic patient. The average child requires a high carbohydrate, high protein, low fat diet with caloric value adjusted to his age and activities. The approximate caloric requirement of the normal child based on age, sex, height, and weight can be found in any textbook of pediatrics. The needs of the diabetic child vary little from the normal. Undernutrition must certainly be avoided during the period of growth.

Practically every diabetic child requires insulin for optimum control of his disease. Most children require both a slow-acting insulin (protamine) to control the basal metabolism and prevent a night blood sugar rise, and a rapid-acting insulin (regular) to minimize the blood sugar rise after meals. Many physicians give both types of insulin before breakfast. Smaller doses of regular insulin are given before lunch and dinner, if necessary, to maintain a fairly normal blood sugar throughout the day. If preferred, the protamine insulin may be given at supper time. In either case the protamine insulin dose should be large enough to bring the fasting blood sugar within normal limits with little or no sugar in the fasting urine, but should be small enough to prevent the occurrence of insulin reaction between supper time and breakfast time. The regular insulin dose must be large enough to prevent the excretion of a large amount of sugar following the meal at which the dose is given, yet small enough to prevent insulin reaction before the next meal. With these two types of insulin it is usually possible

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to establish and maintain a fair degree of standardization even in the more severe diabetes of childhood.

The child may be considered to be standardized when the daily blood sugar fluctuation is within normal range during most of the day (day being interpreted as a 24-hour period); when the patient never excretes acetone; when his daily excretion of sugar is small in relation to his carbohydrate intake; and when he never has severe, and rarely has mild insulin reaction, these conditions applying when he is up and about his usual activities.

One of the most important considerations during the period of hospitalization is the instruction of the child and of his family. If the hospital does not provide such instruction, the physician must do so. Proper instruction during this period will prevent many difficulties later. The child must be helped to build good diabetic habits at the outset. The more he understands his disease the easier it will be to secure his co-operation. As far as possible he should learn to care for himself. The family must understand thoroughly the child's daily routine, they must be familiar with insulin reaction and its treatment, they must know the importance of colds, gastric upsets, and of slight injuries and infections, and must be taught to report all such occurrences to the physician promptly. They must be able to perform Benedict's qualitative test for urinary sugar, and it is most helpful if they are also able to do a test for acetone. A well-trained mother is the physician's greatest asset in the treatment of juvenile diabetes.

Standardization and Home Follow-up

When standardization is completed and the child returns home, a detailed follow-up program must begin. The frequency of office visits will depend on the needs of the child. Blood sugar tests must be done fairly often at first and must never be omitted for more than a few weeks at a time. The purpose of blood sugar estimation is not only to see how high the blood sugar may go but also to learn how low it may be going. Hence, these tests are of the most value if done at various times during the day. Often in this way a low blood sugar may be revealed before symptoms of reaction have been noted. Readjustment of the insulin dose at such a time may prevent the subsequent occurrence of insulin reaction.

The parent should bring to the physician at the time of the office visit a careful record of the child's urinalyses, insulin reactions, and dietary indiscretions or other irregularities which have occurred since the last visit. With this valuable information, together with the blood sugar reports, the physician may readjust the patient's régime as may be necessary to maintain standardization.

At the office visit the child should be weighed and measured. Height and weight should be average for his age. If growth is not optimal, the diet must be revised to provide more protein and calories for growth. If the child remains underheight while becoming overweight on the calories supplied to provide for growth, the possibility of a multiglandular dysfunction must be considered and an effort made to restore the child's metabolic balance before he has lost his capacity for growth. The so-called "diabetic dwarf" should be discovered at the earliest possible moment and given the advantage of endocrine therapy, if indicated, before he has reached the period when growth is normally diminishing.

It is well to give the diabetic child a complete physical examination at regular intervals. More frequently the sites of insulin injection should be inspected for evidence of fibrosis or of fat atrophy. If such changes are discovered and the site of injection is changed, more extensive tissue damage may be prevented.

The office visit should also provide an opportunity for the parent to present for the physician's consideration any problems that may have arisen in the home. Although these may seem small, the physician must give them time enough to put the parent's mind at ease. It is no small chore to care for the diabetic child daily in the home, and the busy mother who undertakes this task needs much help at first and continuously needs encouragement.

From time to time complications will arise. If serious, these are most readily treated in a hospital. If mild, or if treatment is begun early, they may usually be successfully handled in the home with the co-operation of a well-trained mother. First, insulin reaction must be ruled out. The history of previous urine tests and of the child's behavior will usually diagnose this complication. Prompt administration of carbohydrate confirms the diagnosis at the same time that it cures the reaction. The important thing in any illness of a diabetic child is to avoid diabetic coma. To re-establish control of the diabetes, a rather simple emergency treatment may be instituted. If the urine is tested for sugar and acetone at short intervals (about every 2 hours), insulin may be given in frequent moderate to small doses until the emergency has passed. As long as there is acetone in the urine, treatment must be energetic.

If Benedict's test gives a red or orange color, insulin may be given in a moderate dose. If the test is olive green or yellow, a smaller dose of insulin may be given. The actual size of the dose will depend on the age of the child, the size of the usual insulin dose required, how recently the last dose of insulin has been given, whether the child has retained any food taken, and particularly whether or not infection is present. When Benedict's test becomes blue or green, if acetone is still present, insulin must be continued but it must be accompanied by carbohydrate. When acetone is not present but Benedict's test is positive, relatively less insulin may safely be given. When the urine becomes sugar-free and acetone is not present, carbohydrate may be given without insulin. If in this process there is any question as to whether or not carbohydrate should be given, it is always safer to err on the side of giving abundant carbohydrate rather than to run the risk of having insulin reaction develop unexpectedly. If insulin is given at 2-hour intervals, there will certainly be an accumulative effect eventually for which adequate carbohydrate must be provided.

A well-trained mother can give this simple treatment with a small amount of supervision by the physician. Often the result of the urine tests can be reported and the insulin dose prescribed by telephone. During a common cold or following a dietary indiscretion this routine carried out in the home will successfully control mild or impending acidosis and prevent more serious complications.

Feigning Insulin Reaction

In the child, insulin reaction may be a rather serious occurrence. The diabetic child either has no premonitory symptoms of reaction or he is not aware of them. For this reason his relatives, playmates, and school teachers should understand that inattention, silly actions, or other unusual behavior demands prompt administration of a small amount of carbohydrate to prevent serious insulin reaction from developing. Most children will learn to carry the necessary carbohydrate with them without undue temptation if it is an odorless form and is well wrapped. It is a mistake to treat insulin reaction with any form of carbohydrate that the child especially enjoys. This makes the event a satisfying form of behavior and the clever child will be tempted to feign insulin reaction for the sake of the pleasant treatment it merits. Feigned insulin reaction may then become a serious problem.

The physician's patience may be taxed by the problems arising in the social relations of the diabetic child for which his counsel will be sought. The medical régime of the diabetic child may have to be readjusted to meet the needs of his school program or the social problems of adolescence with its picnics, dates, and parties. Arrangement must be made for his care while at camp, at work, or at college. He must select a vocation which will not interfere with his diabetic way of life. The physician will find the discussion of these things time-consuming. If, however, these problems are not met, the diabetic child may become a socially and economically inadequate adult. Finally, the question of marriage must be considered. The hereditary factor in diabetes is well recognized. Opinion differs as to whether it is worth while to try to limit the offspring of our diabetic patients. This problem must, however, be faced by diabetic youth contemplating marriage.

If the general practitioner can provide the diabetic child with good medical care so that he may become a well-developed and healthy diabetic adult, if he can help him to select an occupation in which his health is not jeopardized and in which his disease is not a hazard, if he can bring him to face the social implications of marriage and parenthood seriously, he will have made a considerable contribution to his community as well as to his patient.

AUTHORIZATION OF PHYSICAL EXAMINATIONS, TREATMENTS, OPERATIONS, AND AUTOPSIES

Ordinarily an operation must be performed strictly within the limits of the authority that has been given. Authority may be given, however, for the operating physician to use his own judgment, and this usually should be demanded by the physician.

Written Consent Preferred

Consent by word of mouth to an operation or an autopsy is probably the most common form of consent. . . . Oral consent is, however, open to misunderstanding and may be difficult of proof. Whenever it is to be relied on, consent should be given in unequivocal terms, in the presence of one or more disinterested witnesses. Written consent to an operation or to an autopsy is by far the safest, for it permits a clear record of the nature and extent of the operation or autopsy that is authorized. If the patient is a minor, authority for an operation must come from his parent or guardian.—*Board of Trustees, The Medical Society of the State of Pennsylvania.*

Management of Pregnancy in Diabetes

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THE pregnant woman presents changes in each trimester of sufficient importance that their consideration is necessary before any discussion of the management of pregnancy in diabetes is possible. A thorough understanding of these changes will simplify greatly the management of both the diabetes and pregnancy.

Prior to the use of insulin, fertility in the diabetic female was relatively rare—2 per cent. Those who were fertile were usually mild diabetics, and if not very mild most of them aborted in the early months of pregnancy, and this inobviated the necessity for the consideration of the latter trimester. Since the advent of insulin the incidence of fertility is much greater—20 per cent, and coincidently there will be much more necessity for the management of these cases. At the same time the mortality of diabetes in pregnancy has dropped from approximately 20 per cent to about 1 per cent in all cases, and much less in the carefully controlled case. The fetal mortality rate unfortunately has not improved as markedly, for it has only dropped from 60 per cent to 40 per cent, and as low as 20 per cent in most well-controlled clinics, partially at least from the fact that certain of the etiologic factors causing death of the fetus in utero have been poorly understood and many of them are still very obscure.

Changes in the maternal organism which are relevant to the management of diabetes may be briefly summarized as follows: (1) The basal metabolic rate gradually increases during pregnancy until during the last month it averages about plus 10 per cent. (2) The alkaline reserve is diminished with a tendency to acidosis. (3) The carbon dioxide combining power of the blood averages about 5 per cent lower than normal. (4) The renal threshold to glucose becomes lower. (5) The glycogen stored in the body becomes less in amount. (6) There is an increase in size and number of the islands of Langerhans beginning in the second trimester. Most of these factors outlined are relevant to acidosis, so that the margin of safety is much less than in the nonpregnant woman.

Next we must consider the changed metabolic necessities in the mother. There is seldom lack of fat, protein, or carbohydrate in the normal pregnant woman in this country, where most individuals use about 200 or 300 per cent of their metabolic requirements. However, the diabetic differs in that his intake must be much more accurate and there cannot be overloading as is the general custom of the country. Most observers agree that 50 grams of glucose are necessary for the continued growth of the baby in addition to the usual amount needed for the mother's metabolism. Also, 25 grams of balanced protein in addition to the 75 grams is usually advised. In this connection it is worth while to note that there is very little proof that increased amounts of protein are harmful to the pregnant woman or that there is any especial increase in the appearance of the late toxemias of pregnancy following high protein diets. On the other hand, the dietetic group of late toxemias with edema from insufficient protein are well recognized at the present time.

In the last trimester there may be less insulin required to maintain proper sugar levels in the pregnant diabetic because of the elaboration of the insulin by the fetus. While this point has been debated, experimental evidence is strongly in favor of this occurrence in a large proportion of cases. Necropsy of the fetus shows an increase in the number and size of the islands in a large proportion of cases. An animal may be pancreatectomized late in pregnancy and not die from disturbance of the sugar metabolism until after the uterus has been emptied. The time of the elaboration of insulin by the fetus is variable, and this adds to the difficulties. However, these are variable factors and seemingly do not take place in all cases, but are of the most important consideration in caring for each individual case.

The occurrence of intra-uterine fetal death is a factor which gravely affects the glucose metabolism and probably often precedes and perhaps causes coma in many cases. It is difficult

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to separate cause and effect, even in retrospect, but there are certain factors which may be considered that permit a clearer conception of the probabilities.

First, let it be said that acidosis seems to be much more fatal to the fetus than hypoglycemia. Repeated occurrence of hypoglycemia often has had no effect on the fetus while acidosis has seemed to be fatal to the fetus. Exceptional care must be taken during any intercurrent infection which is apt to be accompanied by a decreased power to burn sugar. There should be an attempt to keep the blood sugar below 160 and urinalysis should include acetone and diacetic acid tests. The determination of the carbon dioxide combining power of the blood should be done to aid in the regulation of treatment in all patients suffering from acidosis and coma.

Second, there is a disturbance of the estrin-prolan balance in a large proportion of diabetic mothers. This probably runs as high as 50 per cent. The Boston group of P. White, Smith, and Smith et al. have done a very valuable piece of research in the study of this relationship. They have found that certain diabetic mothers have had a tendency to secrete prolan (anterior pituitary-like hormone) in greatly increased amounts and that it is this group who develop toxemia of late pregnancy. By administering large amounts of estrogenic hormone, they have been able to prevent toxemia and have lowered their stillbirth rate to a level comparable to other women. Unfortunately, this replacement therapy has been very expensive because 150,000 to 300,000 international units must be given daily. However, the recently elaborated estrogenic substances which have been synthesized should reduce this expense to put it within the reach of all. It would seem warrantable to give any woman who is developing signs of late toxemia of pregnancy and is a diabetic large doses of estrogenic hormone even without the determination of prolan excretion. Of course, the other accompanying well-known aids should be employed; namely, bed rest, high protein diet, mild fluid restriction, and low salt diet.

Third, there is a considerable increase in the number of fetal anomalies, various groups reporting as high as 10 per cent.

Finally, in about 40 per cent of diabetics going to term there is considerable overgrowth of the fetus to gigantism. This is a point which should be borne in mind at all times by the obstetrician. Evidence seems to point to the usual somewhat higher than normal blood sugar levels as etiologic of this overgrowth, while others feel that the endocrines control this abnormality. Many authors suggest that any woman giving birth to a baby of over 9 pounds should be kept under observation for diabetes following her pregnancy.

The preceding points have not been supported by argument nor can they be in a discussion of this length, but seem to the author to be a consensus of opinion at the present time. The knowledge of these factors is essential to the proper management of the diabetic in pregnancy. Beyond doubt the diabetic specialist and the obstetrician must work in closest collaboration in the management of these cases. Frequent conferences, discussion, and knowledge of the other's problems are essential.

Cases resolve themselves in two groups—those having demonstrable diabetes before pregnancy, and those discovered during pregnancy. In the diagnosis of diabetes during pregnancy where there is no preceding history, the following points must be borne in mind: (1) Routine urinalysis will often disclose latent diabetes because of the increased metabolic needs of later pregnancy plus the lowering of the glucose threshold. Any woman having sugar in her urine during pregnancy should be considered as a diabetic until proved otherwise. A thorough study including glucose tolerance tests should be insisted upon. Lactose may easily be separated by one of the fermentation tests. (2) Mycotic vulvovaginitis is much more common in the diabetic and all cases presenting this condition should have a blood sugar estimation at least as well as the usual routine urinalysis. The urinalysis may be negative for sugar, for the vaginitis is probably more dependent on the increase of glucose in the epithelium of the vulvovaginal mucosa than from the urine which is spilled over it. In the consideration of these cases of mycotic vaginitis, which are most often caused by Monilia albicans, may I suggest that 2 to 4 per cent aqueous gentian violet vaginal instillations will aid considerably in the comfort of these patients. (3) Habitual abortion should include in its etiologic study a search for diabetes, which may play the leading rôle.

The obstetrician will often be asked whether a diabetic mother should become pregnant. Some factors must be borne in mind in answering this question: (1) The obstetric and medical cooperation which will be necessary to insure the greatest chance of a living mother and baby. (2) The fact that there is a high mortality of the fetus at its best. (3) The fact that there is quite some chance of the offspring being a diabetic. The percentage of offspring who have diabetes varies in reports by various authors, but it seems that probably 15 per cent will have either diabetes or vascular disease, to which it is closely akin. (4) There do not seem to be any maternal sequelae relating to the diabetes following pregnancy. (5) There is an erroneous understanding among the laity that pregnancy improves the diabetes, the fallaciousness of which should be explained to the patient.

In the first trimester the occurrence of nausea and vomiting causing acidosis is the primary factor to be borne in mind. Should vomiting of any moment develop, hospitalization is necessary with hourly control of the diabetic situation, including the control of the acidosis. It is the custom to give these patients intravenous glucose and insulin until in balance. The free use of sedation (one of the barbiturates) to aid in the control of vomiting is most important. Phenobarbital by mouth, in large enough doses that the individual starts to live a vegetative life, is most often used. Sodium phenobarbital may be used hypodermically.

During the second trimester the development of acidosis and keeping the gain of weight of the mother at a normal level of one-half to three-quarters of a pound per week are the most important things to be borne in mind. Observation at this time will usually be suggestive when overgrowth of the fetus is apt to occur, and keeping the level of the blood sugar as near normal as is feasible may aid in control of the weight of the baby.

Early in the third trimester vigilance will have to become very exact if pregnancy is to progress in its normal fashion. The blood sugar estimations will have to be done at frequent intervals, perhaps once or twice a week. If at any time there is evidence of elaboration of insulin by the fetus, it would probably be wise to hospitalize the patient and make a survey of the situation.

As parturition approaches, the obstetrician should begin to have rather well-defined ideas of the obstetric management of each individual delivery. During the eighth month, should the fetus seem the size of a full-term pregnancy, cesarean section or induction of labor should be considered. Free use of the antepartum cephalometer is of value at this time in ascertaining the size of the baby. At the same time the roentgen ray should show any gross fetal anomalies which may occur, especially anencephalus. Obstetric findings suggestive of a long, hard labor should influence the obstetrician toward cesarean section. Primiparas who engage the fetal head early or multiparas who have had no overgrowth of the fetus giving signs of cephalopelvic disproportion should be delivered by the vaginal route following induction of labor.

Delivery at any rate requires the same preparation of the diabetic as any other surgical procedure, namely:

1. Control of diabetes with blood sugar below 170, no acidosis, and proper insulin balance.
2. During operative-postoperative period give same amount of carbohydrate divided into 4 or 6 feedings by mouth or vein with adequate insulin.
3. Frequent blood examination to regulate insulin balance.

Immediately after birth the infant is apt to have a hypoglycemia of some severity. This is because of the increase in insulin production which has been carried on in intra-uterine life. Some of the lowest blood sugar levels recorded have been in infants of this kind. Cyanosis and tremors are among the symptoms which these infants display. It seems that giving a simple glucose solution by mouth usually relieves this.

Diabetic mothers seldom have breast milk. About 20 per cent may have it. The knowledge of this fact will avoid attempts to nurse the newborn and they should early be put on suitable artificial feedings.

Summary

1. Closest co-operation of the obstetrician and the diabetic specialist is necessary in the proper management of diabetes in pregnancy.
2. Acidosis, even its mildest forms, must be prevented.
3. Acidosis, endocrine imbalance, development of fetal monstrosities, and overgrowth of of the fetus cause the fetal mortality rate to be about 20 per cent at the present time.
4. Cesarean section must be considered in more cases than in the normal management of labor.
5. The production of insulin by the fetus may complicate the management of the diabetes during the pregnancy and the management of the newborn infant.
6. Mycotic vulvovaginitis and habitual abortion should indicate diabetic studies.
7. Diabetic mothers seldom have adequate breast milk.

ABSTRACT OF DISCUSSION

David W. Kramer (Philadelphia): Dr. Porter has given a clear, sincere view of the effect of diabetes on pregnancy and the possible effect of pregnancy upon the diabetes. Unfortunately, speakers on this subject are so engrossed in the points that they want to prove that facts may be unwittingly distorted. I approve and heartily agree with everything Dr. Porter has said, with just one or two minor points.

There are two angles of the subject that must be considered. One is the interrelationship between the diabetes and the pregnancy and the possible effect of one upon the other. The second problem is one which should be thoroughly thrashed out by those interested in the subject, and that is: Should a diabetic undertake pregnancy?

The latter subject is very important because it not only embraces the problems which must be considered before one can advise the diabetic who is considering having a child but the problem of what is to be done with a diabetic who is pregnant. Are we justified in permitting the pregnancy to go to term, or is it advisable to consider terminating the pregnancy? Formerly, this situation was not a common one. In recent years, however, these occurrences are more frequent.

What is the effect of the pregnancy upon the diabetic mother? Dr. Porter mentioned that the diabetic pregnant woman may show a higher metabolic rate; acidosis is more apt to develop, and toxemia is certainly more common in diabetics than in nondiabetics. Eclampsia occurs far more frequently, according to Wilder's statistics. He stated that eclampsia occurred in 5 per cent of diabetics and in only .3 per cent of nondiabetics. With these figures, the diabetic pregnant woman is 15 times more liable to develop eclampsia than the nondiabetic. Here we already have a situation which commands our interest.

The question of mortality rate is one on which I would like to take issue with Dr. Porter. I cannot find such an optimistic figure as 1 per cent in my experience, nor even in a well-controlled hospital or institution.

In making a survey of this subject, which I had the privilege of presenting 5 years ago before this section, collecting reports of 665 cases, our percentage was 4.2 per cent. Wilder's percentage in his recent book is 3.8 per cent. In other words, a diabetic mother undertaking pregnancy assumes a liability 6 or 7 times greater than the nondiabetic mother. This, I think, is a very important issue.

As to the child, I agree with Dr. Porter that with our better methods of management we have lowered the mortality rate or, shall we say, the possibility of having a viable child has increased. Five years ago my figures indicated that about 56 per cent failed to have a viable child. That percentage has been lowered to 40 per cent and, as you heard today, in some controlled institutions this has been lowered to 20 per cent. This is most desirable. However, we must keep in mind that even a mild diabetic may be unfortunate enough to have a stillborn child. That is one eventuality that we cannot predict. Then, again, the statistics show that abnormalities in diabetic children are much higher than in those born of nondiabetic parents.

As far as the diabetes is concerned, with our improved methods of treatment we can assure the mother that she will get by with the diabetes. Some patients require more insulin after pregnancy than before. But when large series of cases are studied, these averages balance and we cannot say that the pregnancy will affect the diabetes to any great degree. Some of these women may be worse, some may be better, and in others there will be no change whatever.

The main concern of many of these diabetic mothers is about the child. They seem to be worried that the child may be a diabetic. I think this question is only of minor importance. The child may not be as robust as others. Despite the statistics on hereditary influences in diabetes, I do not think we can prove that these children are more apt to become diabetic than others.

Another factor which must be taken into consideration is the economic status of the patient. A diabetic mother who undertakes pregnancy must have closer medical observation and she must be prepared economically and financially to undertake hospitalization later in the course of the pregnancy. In some of our cases there was a surprising development of acidosis in the seventh or eighth month of pregnancy without any manifestations or symptoms. In one case the CO_2 was as low as 32 per cent without the patient experiencing any discomfort or symptoms. The blood finding was discovered merely on routine examination.

From these facts I believe that, before we can advise diabetics to undertake pregnancy, there should be a frank discussion of the possibilities, the liabilities, and whether or not such diabetics are able to undertake the close co-operation mentioned by Dr. Porter in his presentation and are prepared for periods of hospitalization, if necessary. They must carefully consider all the facts, pro and con. Then, if a diabetic woman does decide to undertake childbirth, we can promise her a good chance of getting through the pregnancy, of controlling the diabetes, and a fair chance of having a viable child.

BANTING'S MEMORIAL

While war is tearing at the heart of many nations and mass death is accepted as the inevitable concomitant of the vast struggle, the medical world is shocked by the news of the death of Dr. Frederick G. Banting. Banting's death strikes home to the hearts of physicians and medical scientists everywhere. He whose energy and creative spirit contributed so richly to the extension of human life in all lands has fallen a victim to the most destructive social force known to man. War, the product of the evil which infests human society, has destroyed a life which represents the best in modern constructive science. The researches of Banting and his co-workers and the application of their discovery are of epic significance. Their accomplishment was revolutionary in effect when applied to the treatment of diabetes. Such work points the direction in human progress.

War and humanitarian science cannot occupy the fore at the same time. The destructive phase through which the world is now passing is dominated by power against power. Science must wait until these forces are exhausted by their own methods. Meanwhile let Banting's monument be wrought as a hero of peace, a man of good-will—a symbol for all mankind waiting on discovery and the application of scientific technic to human needs.—*The Journal of the Kansas Medical Society*, March, 1941.

Reading and knitting are enemies of complete relaxation. See page 1055, Chester County Society report.

Treatment of Diabetes in the Aged

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THE problem of the aged diabetic is the special business of his everyday physician. The flagging energies of the senescent patient make it practically impossible for him to travel long distances for frequent, necessary examinations. A multiplicity of physicians, technicians, and nurses is confusing, and naturally the patient shrinks from the difficulties of the complicated technics they suggest. His enthusiasm is hampered by the certain fact that his expectation of life is limited at best and he is tired. After all, our older patients ask us for more comfort, not difficult cures. The design of therapy must be as simple as the oldster desires, and it should not attempt to change the habits of a lifetime.

It is fortunate that modern therapy of diabetes can be geared down to the speed of the normal mental and metabolic rates of our older patients. Naturally, slowed physiology and protamine zinc insulin have made this possible. The results of our efforts should and can be so obvious to the patient and his relatives that he will not permit the deteriorations of diabetes to multiply the discomforts of his declining years. Tolerant slow-motion home care will appeal to the oldster; an unhurried plan of therapy will win his confidence. Rapid cures, long hospital residence, and unusual diets will seem much more terrifying than the gentle deterioration of his diabetes.

The older patient requires his physician's skill and knows it, but he may not visit his physician promptly or willingly. He has definite reasons. He may fear the findings of the physician's examination, and he may doubt his ability to help him at his age. The cost of medical care may seem too great, or he may desire to maintain an independent existence without being a burden to others. Older diabetic patients are characteristically tardy, have a delayed response time, and progress in the treatment of their diabetes and its complications is impeded by repeated mistakes. Nevertheless, many of them finally become co-operative patients and loyal friends.

Respect the age of the elderly diabetic and teach him gently by repetition. Spare him the dictum that his symptoms are due to his age and, therefore, irremedial. The older diabetics are now more numerous, and will be more so with each improvement in the treatment of diabetes. The mortality and morbidity rates for diabetes are too high. Individual physicians can lower these rates by gently applying present-day methods to the older diabetic patients in their homes. Well-applied home therapy, as we now know it, will preserve more of our elders and make possible the use of future discoveries in the field of metabolic disorders. Hope for improved therapy should be eternal.

Study of aging diabetics comprises a complete course in geriatrics. They are susceptible to all the diseases of their period, plus the hazard of diabetes mellitus. The physician's first duty is to study and control the diabetes and prevent or cure its complications. The well-treated diabetic is as sturdy as the elderly nondiabetic. Common experience teaches us that control of the diabetes will halt or improve the complications of the diabetes, other things being equal. Conversely, failures can be traced to faulty diabetic treatment all too frequently. The practice of permitting older patients to have an elevated blood sugar so that they will feel better must be severely condemned. The partially controlled senescent is approaching his diabetic complications as surely as the untreated patient, though the rate may be slower. The blind old diabetic is a pathetic figure, and is seen frequently in a busy clinic. There is always a certain number of these older patients with their artificial limbs and crutches. All of the threatening or established complications, circulatory or infectious, should have the benefit of complete medical control if operation is contemplated. This has certainly increased the number of successful eye operations and will further reduce the surgical mortality rate in the amputation cases. Diabetics

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are good surgical patients if the physician prepares them thoroughly.

Extra-diabetic complications, responsive to proper therapy, will be successfully treated in the diabetic. The aged diabetic may then die with his diabetes, not on account of it. In the experience of the writer, treatment of nondiabetic conditions in a diabetic has combined well with a reasonable metabolic régime. Some more common extra-diabetic disorders found that will easily adapt themselves to an ordinary diabetic diet are peptic ulcer, tuberculosis, arthritis, hypertension, and pernicious anemia. The latter requires special mention; the maintenance dose of liver may be mixed with the daily insulin dose, effectively controlling both conditions.

Complications of diabetes tend to defeat the efforts of the physician in the establishment of a routine for living. The loss of vision effectively bars the patient's ability to measure his insulin or regulate his diet. The loss of an extremity is a calamity to the daily routine that is necessary to the maintenance of life. Successful management of diabetes is now measured in decades, and the free and independent co-operation of the patient is necessary. A real impediment to the proper therapy of our older patients is slowed or faulty cerebration due to arteriosclerotic changes in the cerebral arteries. No less, a limited circulatory response to effort limits the possibility of a long-term independent control of diabetes. The problem of his daily care must then be assumed by some member of the family or a paid agent. Sometimes this arrangement is difficult. The blind attempts to lead the blind not infrequently.

Social Aspects of the Aging Diabetic

Many of our senescent diabetics have had serious disruption in their ordinary family ties and living conditions. The recent depression has deprived many of their homes. Their children have little time to give to diet, insulin, or general care. Inmates of homes for the aged are in even greater difficulty. The simplest departure of home or institutional care from a blanket routine seems quite upsetting. Delinquencies in the proper home care of our oldsters are so frequently out of the control of the patient himself that there is little to do about it, except perhaps to hope that long-acting insulin will confer enough reserve to offset careless therapy. This hope is unfulfilled to date.

Metabolism in the Aged

For the purposes of this discussion only, I would like to define my terms.

Standard metabolism (also called basal and minimal) is the activity necessary to the maintenance of fundamental or vegetative processes of life.

Extra-metabolism is the use of food or stored materials to produce the energy and heat of every other form of bodily function and work.

Diabetes mellitus is mostly a deficient insulin response related to the pancreas or reserves. Dietary limitations or added insulin are two ways of roughly measuring this hypoinsulinism.

The study of *standard* metabolism would be much more interesting if its functions and processes could be separated from a mass of *extra-metabolic* activities. The normal alterations of metabolism in old age clear the confusion as much as could be expected in a study of diabetes in its natural state. We have not agreed upon many of the details of the mechanism of insulin action upon the storage, transportation, and oxidation of metabolites, nor is such an agreement necessary. Food will not become body tissue, energy, or heat without the leaven of insulin. Stated more crudely, our food becomes us by the insulin route. Many of the metabolic variants in the senescent patient can be explained by the diminished physical activities of the patient, in whole or in part. The vigorous discharge of energy, as work or heat, has been gentled by essential physiologic and tissue failures. The swift swirl of tides of metabolic transport necessary to youth have been slowed to the pace of a diminishing blood circulation. Storage capacities are reduced as equilibrators of an uninterrupted fuel supply. It is only necessary to supply limited quantities above the standard metabolism of a subdued individual. There is some evidence that the essential diabetes of the oldster is not different in quality from fundamental diabetes at any age. The blood sugar levels in the glucose tolerance tests or from diet infraction rise to the same heights as at any time in life. Oxygen requirements are reduced but slightly, not beyond the easy explanation of reduced activities, small circulatory capacity, and a limited extra-metabolism.

The grade of the diabetes of the senile patient does not bear a definite relation to the production of complications. Too frequently the mild diabetic becomes blind or suffers amputation, and the subsequent course proves to be an easily controlled metabolism.

The onset of severe nondiabetic complications as renal failure or apoplexy will frequently appear to ameliorate diabetes far beyond the point expected by the effect of our alteration of treatment or by the effects of the complication itself. As a matter of fact, the diabetes may disappear into the limbo.

That the diabetes of the oldster is mild mannered is so well understood that we need not adduce further evidence to prove its grade. Is it not impressive that laboratory findings and research results do not indicate that it is much different from diabetes at any age? The reduced extra-metabolism of the older individuals may teach us that *standard* diabetes or standard metabolism alter but little through the decades of adult life.

Arteriosclerosis is the common heritage of man, entailed at a sufficient age. Diabetic sclerosis does not differ essentially from senile sclerosis in quality or quantity at any single observation. The speed of development is the impressive characteristic. We do not know the metabolic diversions necessary to produce diabetic arteriosclerosis, but we do know that metabolic control of the diabetes will prevent the development of arteriosclerosis, except a normal annual rate. Also, the degree of sclerosis in a given unit of time will be directly proportionate to the degree of control of the mal-metabolism. It might be possible to use the rate of sclerosis to estimate the value of some of the artificial dietotherapy that is proposed from time to time. Senile arteriosclerosis of the pancreatic vessels can produce the paradox of arteriosclerotic diabetes.

The treatment of diabetes at any age is a personal service. The older the patient the more personal interest is required. Progress must be slow, the same mistakes are made many times, and forthright confidence is difficult to obtain. Fear of disaster compels the patient to conceal important episodes from his physician. The physician may lose interest on account of the unending slow pace of improvement and the numerous, and mostly unnecessary, retreats toward a disordered metabolism. On the contrary, the successful control of diabetes and its attendant troubles in the oldster should renew confidence in the soundness of applied physiology.

Special Guides in Treatment

1. Plan a control program in terms of months. Hyperglycemia as a laboratory finding is not particularly frightening if control is possible.

2. Avoid radical changes in diet or insulin. Shocks are serious; glycogen stores in heart muscle should be guarded. Arteries are fragile. The structures of the eye and nervous system cannot resist rapid chemical changes.

3. Reasonable firm discipline must be maintained. Routine visits for blood sugar estimations are necessary.

4. An interested responsible member of the family is the most valuable ally. The patient's statements are colored by a variety of things.

5. Do not take any physical condition for granted. Examine the feet, eyes, and heart. It may take the patient months to get the courage to speak of a sore toe or failing vision.

The diet prescription is the first and most important. Give it in writing and entrust its execution to a younger person if possible. The amounts of carbohydrate, protein, and fat are not impressive to the patient at any time. Senile diabetes is gentle enough to use a household measured diet as routine. As a rule, the average diabetic diet (carbohydrates 150, protein 60, fat 70, and 1800 calories) will serve well as a beginning. The weight and activity are deciding factors in selecting the quantity of food. The senescent, obese patient is a poor risk for reduction, surgery, or a serious infection. His overloaded storehouse suggests more diet and less insulin; this is good treatment if done slowly. The tolerance of the patient is influenced by the body mass at any age. The thin oldster should be brought to a reasonable weight. Chronic cachexia in these thin people represents much greater metabolic deficiency than that of diabetes. Complete nutritional control is imperative.

The diet of older people should not be prescribed and then not followed up. Some of these patients will follow the same diet for years, firmly believing that they are controlling their diabetes. Any insufficiencies of that diet will be multiplied many times by their constant repetition. Vitamin deficiencies and mineral shortages must be foreseen in the original diet prescription.

Insulin

We have a new approach to the therapy of diabetes since the development of the long-acting insulins. Many of our older patients will be able to enjoy better health and have larger and more varied diets if they will use protamine zinc insulin daily. A single dose taken at the beginning of the day will insure a balanced metabolism. The small dose has a definite tonic effect in the far reaches of metabolism; the medium and larger doses will control diabetes. The dose of insulin for the older patients is *enough*. Such a powerful biological must be used with great care. Increases in the amount of insulin must be made carefully, as indicated by the levels of the blood sugar. The zone between safe and unsafe dosage may be narrow. Shocks should be avoided. Insulin may be wasted in some of the obese and milder cases. Too much insulin produces side effects much more serious than the diabetes it was intended to control.

The treatment of each complication of diabetes mellitus has its own approach. Any complication, regardless of origin, found in the older diabetic patient will demand diabetic control. Nondiabetic complications have the same prognosis in the controlled diabetic as in the average nondiabetic. Diabetic complications occur in the elderly diabetic in direct proportion to the degree of established control. The cure of diabetic complications is proportional to the degree of diabetic control, the amount of tissue destruction, and, roughly, the completeness of the rôle of diabetes in the production of the pathology.

The aged diabetic may be difficult as a medical patient, but if successfully treated, he is always a loyal friend and grateful to his physician.

ABSTRACT OF DISCUSSION

Frank A. Evans (Pittsburgh): The most important point in the treatment of diabetes in the elderly patient, I might say platitudinously, is to treat it. There has been an unfortunate tendency to lower ideals in the treatment of a diabetic if he is elderly, perhaps in the hope that he will die of something else before he will be bothered by the sequelae of prolonged hyperglycemia. I cannot agree with that. When we see these elderly people, getting into difficulties, we must feel that they should be prevented if possible and an effort should be made to obtain physiologic balance in them as with other diabetics.

It is true, as Dr. Mitchell pointed out, that control of the diabetic state should be accomplished somewhat more slowly, somewhat more gently, and the subject discussed with the elderly less frankly and with more tact.

If you can gain the intimacy of personal friendship with these elderly diabetics, it helps a great deal. Fortunately, so many of them are such genial companionable old souls that you can with ease, pleasant profit, and diversion make of them a dinner or luncheon companion.

The treatment of diabetes in the elderly raises the question of its recognition. So often we see these elderly people getting cataracts, or we see them first complaining of symptoms of vascular disorders, and find that the real background is diabetes. The diabetes in them is often so mild that it goes on without recognition for a long time. It is those unsuspected mild cases that so often bring the unfortunate results. The need for detection of these cases is another strong argument for periodic health examinations.

The Surgical Diabetic

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IT IS common knowledge that since the discovery of insulin the field of diabetic surgery has become one of great specialization. Insulin has not conferred immortality upon the diabetic, but has permitted him to enjoy a longer life. Many who would have died in infancy, from diabetes, live to become adults and develop diseases of adult life which require surgical care. Others live to the age where degenerative diseases such as arteriosclerosis, nephritis, etc., develop and contribute to their death. Thus the number of surgical diabetics has been greatly increased; in fact, Joslin states that over 50 per cent of all diabetics receive surgical care some time in their life. Statistical studies further show that the number of diabetics has doubled in the United States in the past decade. These statements make it clear that the treatment of the surgical diabetic is a growing problem.

In operations of election the patient can be properly standardized, and the surgery performed at the best possible time. The operative risk and the mortality rate in elective cases are very little if any greater than in similar operations performed upon the nondiabetic. In emergency cases particularly, accompanied by infection, both the operative risk and mortality are greater in the diabetic. John compiled the results reported by many authors before the use of insulin, and the average mortality rate was 24.2 per cent. Since the use of insulin the average mortality rate in over 14,000 patients composed of both elective and emergency cases was approximately 5 per cent. Both of these

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figures are obtained from compilations that include a large number of cases of diabetic gangrene, which has a very high mortality rate as compared with other surgical conditions. The combined management of the surgical diabetic by the internist and surgeon has contributed greatly in this reduction in mortality. This is clearly shown in several large series of cases reported in which the patients were treated under this régime. There is probably no field in surgery which requires closer co-operation between the medical and surgical departments.

Infection, acidosis, and arteriosclerosis are the 3 most common complications which increase the surgical risk in the diabetic. Through experience, this increased risk has been diminished, as we have learned how to manage these conditions more intelligently. We have known for a long time that in the diabetic both the local and the general resistance to infection is very poor. In the course of treating a patient who is not known to have diabetes, not infrequently the first thing that attracts our attention to the possibility of the patient having diabetes or a gross disturbance in carbohydrate metabolism is the failure of an infectious process either to localize or to respond to adequate incision and drainage. The most common offender in our experience is the palmar abscess.

Beware Procrastination

Infection makes it more difficult to standardize the carbohydrate metabolism, and not infrequently patients continue to approach acidosis even though an earnest effort is made to control the diabetes. This occurred so frequently in our experience that we soon discovered that it is a mistake to postpone operation in an attempt to reduce the blood sugar to normal. Instead, incision or excision of the infectious process is indicated, depending upon the condition of the patient and the extent of the infection; then the carbohydrate metabolism is much more easily controlled. Procrastination in surgical intervention has added greatly to the morbidity and the mortality in the treatment of carbuncles and gangrene in the diabetic. It is generally known that arteriosclerosis is much further advanced in a diabetic than in a nondiabetic of the same age. This necessitates an accurate study of the entire cardiovascular system before an operation is performed upon a diabetic. The degree of arteriosclerosis present in any patient is of great importance in attempting to give a prognosis. We have learned that the ability of a patient to localize an infection is greatly decreased when there is an advanced degree of arteriosclerosis present. This in turn offers an unfavorable surgical prognosis.

Diabetic acidosis, a most dreaded complication, deserves careful consideration. When it is either present or pending, any surgical procedure is attended by a very high mortality. Until recently the abdominal symptoms associated with the early stages of diabetic acidosis had not received just consideration. Our interest had been focused upon the symptoms of the terminal stages of diabetic acidosis; namely, deep sighing respirations, and increased drowsiness which developed into deep coma. The abdominal symptoms which are characteristic of the early stages of diabetic acidosis are nausea, vomiting, and abdominal pain associated with tenderness, fever, and leukocytosis. These symptoms and findings are very typical of many acute abdominal conditions for which a surgeon is consulted. They occurred so frequently in our experience that they led to a study of the evaluation of abdominal symptoms in the diabetic, which was reported in collaboration with Dr. Beardwood a few years ago.

In some cases it is impossible to differentiate between early acidosis and an acute abdominal condition without a urinalysis, blood sugar, and plasma CO_2 determination. Diabetic acidosis develops gradually over a period of several days, and polyuria and polydipsia are usually present. The abdominal symptoms, however, may have a very sudden onset. No surgical procedure should be undertaken until the acidosis is properly controlled. This may be accomplished sufficiently in 3 to 6 hours to permit another examination to determine whether or not any underlying abdominal condition is present. The degree of hyperglycemia is not as important as the level of the CO_2 in the estimation of the operative risk. Operations are frequently performed with the blood sugar as high as 300 mg. per 100 c.c. provided the CO_2 is not too low. We feel that it is not safe to perform any surgical procedure with the CO_2 less than 40 volumes per cent, and if the abdominal condition permits, the CO_2 should be brought up to 45 to 55 volumes per cent. A most interesting observation is the difference in the character of abdominal pain. We have noted that it is most severe in diabetic acidosis, and that an acute abdominal condition occurring in a diabetic will give symptoms which are much milder than those produced in a similar lesion in a nondiabetic. In 42 diabetics, with acute abdominal conditions, complicated by extensive infection, there was not a single instance of acidosis. This is difficult to understand in view of the fact that minor infections elsewhere in the body, particularly in the extremities, frequently precipitate acidosis.

The anesthetic should be selected with care, as some are more likely to produce acidosis than others. Local anesthesia is the safest and most desirable. Many surgeons are partial to either spinal anesthesia, ethylene, or cyclopropane. Any one of these anesthetics can be used with safety and with very slight alteration in the carbohydrate metabolism.

A routine has been established for the management and preparation of diabetics for operation. This is under the direction of the internist, and may vary with individual cases, depending upon his judgment. The preoperative preparation differs for elective and emergency cases. Patients admitted into the hospital in coma are divided into 3 groups depending upon the grade of coma present: grade 3, when the CO_2 is 20 or lower and the patient is unconscious or semicomatose; grade 2, when the CO_2 ranges between 20 and 35 and the patient is only partially comatose; and grade 1, when the patient exhibits no clinical evidence of acidosis, but the laboratory findings suggest this condition. The treatment depends upon the degree of coma present. It is important that we do not focus our attention entirely on the diabetes in a patient admitted in coma. A careful examination of the other systems may find some condition which is of equal and sometimes greater importance in determining the surgical treatment.

There are some conditions which we treat surgically in the diabetic that merit discussion; namely, gangrene, hyperthyroidism, and cholecystitis. The mortality in diabetic gangrene presents a discouraging picture. In the series reported, it varies from 5 to over 60 per cent. A number of things are responsible for this wide variation: (1) differences in age, (2) type and degree of infection present, (3) the number of patients in whom the diabetes had been inadequately treated before hospitalization, and (4) the percentage of patients admitted to the hospital with severe gangrene who were not known to have had diabetes. In view of these facts, may I repeat that the development of gangrene would be diminished in the diabetic if he would immediately consult his physician and receive proper advice and treatment for any trauma to the extremities regardless of how minor it may be. It is also the duty of the physician to examine frequently the extremities of diabetic patients, to warn them of the early symptoms of trouble, and to discourage self-chiropody. The physician should also study the carbohydrate metabolism in all patients presenting symptoms or physical findings suggestive of gangrene.

Many patients who have diabetes for a long period of time develop a rich collateral circulation in the extremities. Conservative surgical procedures may be employed in 40 per cent of the patients in whom this fortunate condition exists. By conservative measures is meant incision and drainage of the local process, drainage of the entire plantar space, or an amputation of the toe. Mild antiseptics are used in dressings, but recently we used zinc chloride both as a paste and to irrigate sinuses with very gratifying results. It has been our experience that when several toes become involved, and the cellulitis extends over the dorsum of the foot, more radical surgery is necessary. In extensive infectious processes, where the condition of the patient will not permit a major operation, we frequently institute incision and drainage to permit the diabetes to be controlled more readily, allow the general condition of the patient to improve, and later under more favorable conditions perform the amputation. The most frequent site of amputation is in the mid-thigh; however, if the patient is young, and the blood supply to the extremity is adequate, amputations have been satisfactorily performed below the knee in well-selected cases.

For many years the management of hyperthyroidism associated with diabetes presented the problem as to which should be controlled first, the hyperthyroidism or the diabetes. We now know that we should control the hyperthyroidism first. Frequent estimations of the blood sugar should be made as insulin becomes more effective as the hyperthyroidism improves. These are recommended to guide the dosage of insulin to prevent insulin shock. In severe cases the diabetes may be very difficult to control and multiple-stage operations are indicated. In several of my patients it has been necessary to remove the thyroid in 3 stages because of the severity of the diabetes and the hyperthyroidism. With the proper preoperative preparation and the use of the multiple-stage operation in the severe cases, the mortality should be very little if any greater than that obtained in the nondiabetic, other things being equal. Many patients who require more than 50 units of insulin daily to control their diabetes before operation can be managed very satisfactorily on diet alone.

Cholecystitis is thought to be more common proportionately in the diabetic than in the nondiabetic. Bearing out the principle that diabetes is more difficult to control in the presence of an infection, it is generally held that cholecystitis aggravates the diabetes. It is also reasonably safe to say that after the focus of infection has been removed, namely, the gallbladder, the diabetes is more easily controlled. We frequently see glycosuria in patients with cholecystitis who do not have diabetes. After the gallbladder is removed, the glycosuria disappears, but this group of patients should be carefully followed at regular intervals, as they are all potential diabetics. Cholecystectomy can be performed as an elective operation upon most patients, they can have preoperative standardization, and the risk is little if any greater than in similar operations in the nondiabetic. Joslin has stressed for many years that the cholecystitis may be the cause of the diabetes and has advocated the early removal of the gallbladder as a preventive measure.

ABSTRACT OF DISCUSSION

WILLIAM L. ESTES, JR. (Bethlehem): I would like to base my discussion of Dr. Bothe's very interesting paper on a review of a recent series of 314 diabetics; 80 of these had surgical complications (25.5 per cent). These complications consisted of superficial infections (including gangrene), 58.8 per cent, and a variety of other surgical lesions, 41.2 per cent. There were 20 cases of gangrene of the foot and leg, with or without infection, 19 of which required amputation without mortality. The infections consisted largely of osteomyelitis of the toes, metatarsals, and fingers, also carbuncles and peripheral abscesses, and cellulitis of the fingers and leg—3 of which patients died from general septicemia.

The control of diabetes is certainly made more difficult in the presence of infection. There should be as little delay as possible in adequate drainage or proper surgical procedure to eliminate the infection. With prompt and appropriate surgery the level of blood sugar should quite rapidly approach normal under the anticipated adequate doses of insulin. If control of the blood sugar level after apparently satisfactory surgery is still difficult, a most helpful idea has been to suspect an undrained or unrecognized suppurating area or focus of infection as the likely etiologic factor. This postulate has aided us in making an early diagnosis of a perinephritic abscess which might readily have escaped detection. Here again, as Dr. Bothe has pointed out, is a particular phase of the problem in which the closest co-operation between internist and surgeon is essential for a satisfactory outcome.

In spite of the recent tendency to advocate a thorough trial of conservative treatment in gangrene of the foot and leg before radical amputation is considered, I believe that the decision for or against early radical amputation must rest first upon the character of the circulation in the foot and leg, and second, upon whether infection, if present, is localized or spreading. Our experience bears out the belief that in gangrene of the foot or toes, with or without infection, and with absence of pulsation in the posterior tibial, dorsalis pedis, and popliteal arteries, conservative measures will not succeed and amputation above the knee is required. With pulsation still remaining in the popliteal vessels, amputation below the knee may be considered. However, when pulsation is present in the arteries of the foot, conservative measures should be sufficient. Severe ascending infection, even with adequate circulation, may demand radical resection. In the poor-risk patient a single radical procedure may be the operation of choice rather than repeated inadequate conservative measures. Local or spinal anesthesia is to be preferred.

The surgical lesions other than infections and gangrene have been a very varied group. There was one adenoma of the thyroid without toxic manifestations; partial thyroidectomy seemed advisable to avoid the difficulties of later hyperthyroidism and diabetes that Dr. Bothe has so excellently described. The diabetes in this case was easily controlled.

Two cases of acute appendicitis presented no definite problem as there was no associated acidosis. However, we have 3 or 4 cases a year in which the question of an acute abdominal condition is brought up in connection with acidosis. Routine immediate examination of the urine in each potential case of acute abdominal emergency should cull out these cases from those in which surgery is indicated; blood sugar and carbon dioxide estimations will give an accurate estimate of the severity of the condition. Certainly, as Dr. Bothe has so well stated, the possibility of acidosis in an unrecognized diabetic must always be kept in mind as a possible cause for acute abdominal symptoms or disaster may result.

There were 5 cases of cholelithiasis. Two had very marked suppuration, but none showed very much change from the normal in their convalescence, the diabetes being under control during the period of surgical treatment. There were 6 cases of cancer, including cancer of the breast, colon, and cervix; one of these patients died, but cancer and not the diabetes was the cause of the death. There are 7 cases of fracture of the femur, sternum, and tibia, with one death. Again the diabetes did not seem to be a factor. It has been our experience that elective surgery in the well-controlled diabetic can be undertaken apparently with very little added risk, provided, as Dr. Bothe has pointed out, a proper choice of anesthetic is made. We are very partial to the use of spinal anesthesia.

In conclusion, I would like again to stress the fact that the satisfactory solution of this problem rests in the last analysis on the very close co-operation between the internist and surgeon.

Do you do your drinking to make life more pleasant or to escape something unpleasant? See Berks County Society report, page 1053.

Modern Diabetic Care

JOSEPH T. BEARDWOOD, Jr., M.D.
Philadelphia, Pa.

IT would seem obvious from the papers presented in this symposium that the conception of the diagnosis and care of the modern diabetic has changed considerably during the past 5 or 6 years, and it would seem well worth while to sum up the aims and objects of such care, the apparatus and equipment to carry these aims into realization, the results to be expected, and the methods of preventing the complications of this disease. It may be well to preface any remarks which I have to make with the statement that nobody dies of uncomplicated diabetes per se, i. e., high blood sugar, or sugar in the urine, but that diabetic deaths are due to the complications of this disease which, in the vast majority of cases, can be prevented by proper methods of treatment.

Aims of Diabetic Care

The aims of modern diabetic care are: (1) to recognize early the presence of diabetes; (2) to educate the patient in the proper care of his disease; (3) to be alert to the various complications which may occur and how we can best prevent them; (4) to continue to see and advise the patient at frequent intervals and to make a survey of his general condition at each visit; and (5), certainly the most important, to permit the diabetic with the aid of our modern methods of treatment to live out his or her expected span of life and to do so in as normal a way as possible.

Apparatus and Equipment

We are well equipped throughout the State of Pennsylvania to fulfill these obligations to our patients. Laboratory facilities which, of necessity, do not have to entail extensive laboratory examinations are available to all physicians, but it is important that the physician himself be diabetes-conscious. It must be obvious to you, from the figures presented by Dr. Dillon and Dr. Blaine, that diabetes is definitely on the increase, and that it affects a considerable proportion of the population of the United States. Therefore, our first duty should be to be diabetes-conscious.

This disease, while more prevalent in certain age groups, may be seen at practically any time during life's span. We have seen, for example, a child of 18 months and an adult of 93 years who first developed the disease at these varying extremes of age. It does not seem too much to expect that the busy practitioner, in addition to the many other things which he must keep in mind, should do a routine urine examination on all patients at least once a year, and oftener if the patient is suffering from any of the other conditions which are frequently associated with diabetes. It would seem unjustifiable, in this present day of medical enlightenment, to wait until a patient has developed the classical symptoms of diabetes, namely, polyuria, polydipsia, polyphagia, and loss of weight and strength, before suspecting this disease.

There are many symptoms or conditions which antedate the development of the symptoms just mentioned, which should result in examinations to rule out the presence of diabetes. Among the prediabetic symptoms might be listed (1) gradual loss of weight and strength; (2) rather sudden refractive changes; (3) neuritic or cramp-like pains in the extremities which might occur even in the young diabetic and do not of necessity mean that there are extensive demonstrable changes present in the vascular system; (4) infections which fail to heal properly in spite of adequate drainage (it has been our experience that furunculosis is very seldom associated with diabetes, but that extensive carbuncular-type lesions and subcutaneous abscesses are); (5) pruritis; (6) gangrenous lesions of the lower extremities; (7) impotence; (8) extensive pyorrhea; and (9) early cataracts. While it is perfectly true that all of these symptoms at times may be present without diabetes, certainly their presence should at least arouse the physicians' suspicion and suitable examinations should be made.

Read before the Section on Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

Patients with gallbladder disease and hyperthyroidism frequently have an associated diabetes which must be borne in mind. In 90 per cent of the cases a simple urine examination is all that is necessary to confirm the diagnosis. However, 8 to 10 per cent of glycosurics do not have real diabetes, and possibly a corresponding number of diabetics do not show persistent sugar in the urine, as they have a rather high threshold, so that a blood sugar determination may be necessary to confirm the presence of diabetes. If a single blood sugar estimation is to be done, it is often more informative if the specimen is collected 3 hours after breakfast rather than after fasting, as many mild and early cases of diabetes may have a relatively normal blood sugar after a 12-hour fasting. However, a blood sugar estimate taken 3 hours after an average breakfast should, in the nondiabetic, be below 130 mg. (Folin and Wu technic).

Technic of Diabetic Care

Once the diagnosis of diabetes is made, the physician has just begun his duties to the patient. It is important to remember that the diabetic is different in many ways from any other patient. Diabetes, as far as we know, is never curable and the patient will have diabetes the rest of his life. It is important, therefore, that if such a life is to be uneventful and allowed to run its expected course, proper instruction and education of the patient must be started at once. While it may seem difficult at times for the busy physician to take time to instruct the patient thoroughly, such education, in our experience, has saved considerable time and trouble later on in the course of these patients' lives.

The basis of the treatment of diabetes is a well-controlled diet. With the newer thoughts on diet, i. e., higher carbohydrate and lower fat, such a program can be varied to suit almost any type of appetite or can be made to fit in with any family menu. We have found it of great advantage to attempt to adjust the diabetic diet to that of other members of the household so that needless expense in purchasing special foods and extra cooking can be avoided. This can be done by using any of the diabetic manuals or by using the simple scheme outlined in the Primer which was released by the State Society's Commission on Diabetes.

At least some attempt must be made to measure the diet, and the use of household measurements is neither complicated nor difficult. It would seem, from the above statement, that the initial instruction of the diabetic patient should consist of more than simply handing him a printed list or a prepared menu. Indeed, we feel that even the term "diabetic diet" should not be used as, with a few simple adjustments in regard to quantity and balance, the diabetic can eat almost anything that anyone else can eat, with the exception, of course, of sweets and concentrated foods. With such instruction, properly given and understood, the diabetic becomes a much more co-operative patient and a much happier patient, and in our experience is much more free from complications.

The question may be raised as to the difficulty in instructing diabetic patients in the measuring of the diet. I think the answer to that is that most of us who have large hospital services where the average intelligence of the clinic patient is very low and, indeed, where there is very often linguistic incompatibility and difficulty with simple arithmetic, have been amazed at the co-operation obtained from the average dispensary patient who attends the diet classes. It should, therefore, not be too difficult for the average physician to instruct his private patients if he will but take the time and go over in some detail the principles of diet instruction, bearing in mind the fact that such instruction is the keystone of the diabetic's future life.

The use of insulin has revolutionized the treatment of diabetes and, particularly with the newer long-acting insulins, it is now possible to control many patients with severe diabetes by giving them all of their insulin in one injection, or two injections of different types of insulin at one time. It is important to remember that insulin is an adjunct in the treatment of diabetes and probably 40 per cent of diabetics can be well standardized on diet alone. If, however, an adequate trial period of dietotherapy fails to affect the blood sugar favorably, or if the patient is rapidly losing weight and is a young diabetic, the use of insulin should not be postponed. It has been our experience, too, that if the principles of insulin use are fully explained to the patient, and if it is emphasized that insulin is not a drug but merely a replacement of a normal secretion of the body which, because of the diabetes, is secreted in inadequate amounts, we have found no difficulty in obtaining the patients' co-operation.

The use of insulin requires a closer control of the case than is necessary for those diabetics who do not require insulin, because the dosage must be adjusted from time to time depending on the variety of conditions. It is important for the physician, as well as the patient, to realize that insulin is a tremendous boon to the diabetic but that its use requires vigilance and understanding on the part of both. It has been stated that insulin has not done as much to decrease the death rate from diabetes as was first hoped. This, however, we believe is an erroneous statement. Certainly, if used properly, it prolongs the diabetic's life, and renders him free from complications. A presentation of this type hardly permits a discussion of the use and technic of insulin therapy.

Complications of Diabetes

As we stated earlier in the paper, diabetics die of diabetic complications, and these may be frankly diabetic such as acidosis, or they might be lesions of other parts of the body such as coronary artery disease or coronary arteriosclerosis, which are insidiously caused by lack of continued control of the diabetes. It is important for the physician, and to some extent the patient, to realize that to prevent complications—either immediate or future—the diabetic must be controlled at all times. By such control we mean a urine which is sugar-free, and a blood sugar which even in the elderly diabetic does not rise much higher than 150 to 160 mg.

Acidosis.—Diabetic acidosis is still a relatively common cause of hospitalization, and even death, of diabetics. In a recent review of the literature by the author and Dr. John Rouse, the mortality rate varied from 5 to 55 per cent. In that series of 225 cases, the mortality was 5 per cent in uncomplicated cases, and 24 per cent in those complicated by extensive cardiovascular disease. So, it behooves the general practitioner to be aware of the fact that diabetic acidosis is still a serious problem, and in many cases may be the first symptom of the diabetes.

The symptoms of diabetic acidosis which most frequently call the patient's attention to his illness are an increase in the diabetic symptoms of polydipsia and polyuria, followed by a drowsy restlessness. In a majority of cases, as we have reported elsewhere, the abdominal symptoms predominate, i. e., nausea, vomiting, abdominal pain, obstipation, and sometimes localized tenderness. These are associated with an increase in temperature and a leukocytosis, mimicking in many cases an acute abdominal condition. If these symptoms persist untreated, they are followed by Kussmaul breathing, unconsciousness, and death. The picture of deep coma takes a period of 24 to 72 hours to intervene, previous to which are the symptoms previously mentioned. We feel, therefore, that any diabetic who has an abdominal upset or abdominal pain should have every examination to confirm or deny this possibility.

The treatment of diabetic acidosis is not in the province of this paper. Suffice it to say that the earlier the diagnosis and the sooner the treatment, the lower the mortality rate. We would like, however, to stress the fact that diabetic acidosis, even with the use of insulin, is not a thing of the past and all too frequently occurs in diabetics who, because of some infection, metabolic upset, or break in their diabetic régime, develop this purest of all diabetic complications.

Arteriosclerosis.—This condition has been recognized for many years as the most frequent complication of diabetes, occurring possibly 10 years before it does in the nondiabetic, and being associated with certain pathologic changes in the small arteries which are supposed to be pathognomonic of diabetes. The arteriosclerosis leads to these very serious problems: first, the development of impairment of the circulation in the feet, and gangrene; and second, the frequent development of coronary artery disease with thrombosis and occlusion.

The physician should repeatedly examine the lower extremities of all his diabetic patients, noting the color, temperature, presence or absence of pulsation, and any evidence of gangrene. If there is any impairment of the peripheral circulation, the diabetic should be specifically warned of its dangers. Self-chiropody should cease, and care of the feet should be given by the physician or a chiropodist. Well-fitting shoes and stockings should be worn. Extreme degrees of heat and cold should be avoided. If there is any tendency to epidermophytosis, and there probably will be, this should be corrected, either by using a simple permanganate soak or some of the other methods which are recognized in the control of this condition. We feel that many cases of gangrene have their start in an epidermophytosis and the break in the skin enables infection to gain entrance.

If extensive vascular disease is present, the newer methods of treating such a condition, if used early, will usually give satisfactory results. Here, again, the question of prevention is all-important. There is some evidence to support the belief that a high carbohydrate low fat diet tends to produce less sclerosis than one high in fat and low in carbohydrate. We feel, too, that absolute control of the disease is an important factor, as in our experience the diabetics who have developed extensive vascular disease have not been patients with severe diabetes under constant supervision, but rather the mild cases whose disease was unrecognized or inadequately treated.

Avitaminosis.—Much has been written lately about deficiency in vitamins in diabetics, particularly the B_1 fraction. One may gather from the careless perusal of literature that thiamin chloride might be used as an insulin substitute. This, however, is not our experience and we have followed this particular suggestion rather carefully for the past 4 years. It is certainly true that many diabetics have avitaminosis and they should be treated properly, but not with the thought that in any way vitamins may supplant insulin therapy when it is indicated.

In conclusion, I would like to present diabetes as a sensible and reasonable disease which will be seen more and more frequently in the future, regardless of what type of medical work one does. It is a condition in which the results obtained are in direct proportion to the intelligent co-operation obtained between the physician and the patient. When diabetes is discovered, we must remember that the patient is embarking on a new life and it is our duty to prepare him to meet this new type of life to the best of our ability with the available knowledge, and to guide him through that life so that pitfalls and complications can be avoided. Such intelligent care means that the patient will be free to live his or her life in a normal manner, will remain a useful and productive member of society, and the physician-patient relationship will cease only with the death of either the physician or the patient.

RETURN OF BREAD CAST ON THE WATERS

"In this hazardous period of social, economic, and political instability, which is threatening the accepted foundations of life including the time-honored principles of medical practice, it is well for us to continue voluntary care of the poor," says an editorial published in the *Journal of the Oklahoma State Medical Association.* This can be accomplished either through individual or organized effort. Accumulated experience indicates that individual care is not wholly without material reward.

"Dr. Daniel Drake, one of the great in the history of medicine, once said to Dr. Lunsford P. Yandall, of Louisville, Kentucky: 'I have never seen a great and permanent practice, the foundations of which were not laid in the hearts of the poor. Therefore, cultivate the poor. If you need another, though sordid reason, the poor of today are the rich of tomorrow in this country. The poor will be the most grateful of all your patients. Lend a willing ear to all their calls.'

"In Abraham Flexner's autobiography, *I Remember,* there is a statement suggesting that Dr. Yandall may have passed this advice on to his illustrious sons. Dr. Flexner says that when he was a boy one of them treated him for a severe and obscure illness and that 'his remuneration was a weekly loaf of mother's bread, which I regularly used to carry to his home.'

"Early in his career Benjamin Rush said the poor were his best patients because 'God is their paymaster.' At the age of 68, on his deathbed, he said to his son: 'Be indulgent to the poor.' Though a century has passed, we find the following in the *Life of Chevalier Jackson.* Dr. W. W. Keen is quoted as having said, 'Chevalier Jackson's skill was acquired by a lifetime of work with the poor.' No man could wish for a greater reward than Dr. Jackson's skill and the realization of what it has meant to humanity.

"Returning to the sordid side, it may be pointed out that in the eighteenth century Fothergill, whose annual income was $125,000, said: 'I climbed into the pockets of the rich over the backs of the poor.'

"The author recalls that one of his professors, a brilliant teacher and busy practitioner, attributed his high professional rating among the well-to-do on Fourth Street to the influence of his washerwomen and nursemaid patients in poverty row on the water front.

"In his remarkable work on surgery, Henry of Moudeville made the following statement: 'If you have operated conscientiously on the rich for a proper fee, and on the poor for charity, you need not play the monk, nor make pilgrimages for your soul.'

"Let us pray for the preservation of personal freedom in the choice of a physician. It is this that keeps every good doctor's door open to the poor. The doctor needs the chastening influence of their presence, and they need the sense of security and independence which a free choice helps to preserve. In time of trouble there is something intensely vital about this intimate relationship. No doubt this is due to the fact that the true physician is genuinely interested in his patient and does what he can to mend broken bodies without regard to religious faith, moral, social, or financial position."—*New York State Journal of Medicine,* Apr. 1, 1941.

SELECTION OF BLOOD BANK DONORS

Only those persons who have been born in this country and who have never lived in districts where malaria is prevalent should be used as donors for blood banks, Ernest F. Gordon, M.D., Yonkers, N. Y., advises in *The Journal of the American Medical Association* for Mar. 22. He says that such a policy will minimize the possibility of spreading the disease from man to man. The first recorded case of an accidental transmission of malaria through transfused stored blood is reported by him.

In the "Current Medical Literature" section of the A. M. A. *Journal* for Apr. 5, 1941, more space is devoted to abstracts from The Pennsylvania Medical Journal than to those of any other periodical.

Membership vs. Fellowship

There is considerable confusion relative to **Membership** and **Fellowship** in the American Medical Association.

A member of a county medical society automatically becomes a member of the State Society and the American Medical Association but not a Fellow of the American Medical Association. To become a **Fellow** of the A. M. A., he must make **special** application and pay to the American Medical Association the annual dues of $8.00.

About 2500 of the 9250 members of our State Society who pay $8.00 per year for their subscription to the *Journal of the A. M. A.* are not Fellows **only because they have never applied for Fellowship.** Every member of the State Society **should become a Fellow of the A. M. A.**

Only Fellows may register or take part in the annual meeting, which will be held in Cleveland, Ohio, June 2-6, 1941.

American Medical Association

535 North Dearborn Street, Chicago

Application for Fellowship

...., 19.......

I hereby make application for Fellowship in the AMERICAN MEDICAL ASSOCIATION and subscribe for The Journal for one year from date. I am a member in good standing of the ....County Medical Society, a component branch of the .... State Medical Association.

N. B.—Eight dollars is deposited with this application. Should I be granted the Fellowship applied for, this fee is to be credited to my subscription for The Journal. The Fellowship for which this application is made is to be subject to the Constitution and By-Laws of the American Medical Association.

Signed..
NAME IN FULL

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Qualifications for Fellowship—The members in good standing of the constituent state and territorial medical associations of the American Medical Association shall be members of the A. M. A.

Any (1) member of this Association, who, on the prescribed form, (2) shall apply for Fellowship and subscribe for The Journal, (3) paying the annual dues for the current year, shall be a Fellow.

THE PENNSYLVANIA MEDICAL JOURNAL

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1875-1941

An editorial obituary of Dr. Hammond, Editor of the *Journal* from 1925 to 1941, will be published in the June issue.

CHEMOTHERAPY INVOKES CAUTION

The introduction of chemotherapy in the treatment of acute infections of the middle ear and mastoid has proven a most valuable addition to our armamentarium.

Otologists pretty well agree that these infections are definitely influenced to the extent of substantial reduction of the morbidity, of the number of operations, and of the incidence of complications.

The duration of discharge is decreased about 50 per cent, and the number of operative mastoids is diminished by approximately 50 per cent. The tendency to overuse of chemotherapy is subsiding.

There are definite pitfalls and disadvantages in the widespread use of these sulfonamide-group chemicals unless some of the more important safeguards are observed. The trial and error or probationary stage has merged into the final status of therapeutic efficacy. This does not mean that continued research in this chemical group will not introduce other molecular combinations. No doubt the field for chemotherapy will be broadened with time and clinical experience, but its effects upon the human organism and its therapeutic control are quite well understood.

If chemotherapy is employed in acute ear infections, it should be used early and should not be continued indefinitely, even in small doses and in ambulatory patients, without watching for secondary anemia and leukopenia. Hospital observation is essential unless small doses are given.

If larger doses are required, the blood content level of the drug should be checked daily and maintained on an even keel by 6 hour (or less) interval administration throughout the 24 hours. Complete blood counts should be made every second day in order to watch for leukopenia and secondary anemia. Urinalysis should be done daily.

If cerebrospinal complications exist, the spinal fluid content level should also be determined at periodic intervals.

It should be remembered that sulfanilamide can and often does produce fever which subsides when the drug is withdrawn. Also, nausea and vomiting with or without headache can suggest a cerebral complication which may be due to the drug. Prolonged therapy is prone to mask symptoms to such an extent as to hide the progress of the infection and to betray the observer.

An acute mastoiditis which is definitely operative can be so mitigated symptomatically as to simulate resolution, while blood or cranial complications develop insidiously.

Even the roentgen-ray picture is altered and, according to Frederick M. Law, if a patient is under treatment by chemotherapy, this information should be given to the roentgenologist.

Sulfathiazole is far less efficacious in combating cerebrospinal infections because the spinal fluid content level does not approach the blood content level by a wide margin. It is the least toxic.

The importance of taking cultures should be emphasized, although it is not always good policy to wait for a report when the need for an immediate fight against the infection is urgent.

These drugs should not be given with the expectation of cure if infection develops in the presence of broken-down bone and locked-up pus.

It is much safer to operate when the clinical picture so indicates, and it is better not to use chemotherapy postoperatively in uncomplicated cases.

The requirements of *complicated* mastoiditis are operation plus intensive chemotherapy. At times a true picture of the condition present can be obtained only by stoppage of the drug. The middle ear discharge may dry up while the mastoid may continue to break down. Because of the tendency to, or/and the production of a false sense of security, the evaluation of the clinical symptomatology under chemotherapy is necessarily altered.

It is safe to say that 65 per cent of middle ear and mastoid infections are streptococcic. The second in order of frequency are pneumococcic and the third staphylococcic. It is obvious that we have potent agencies at our disposal in the fight against the far-reaching ill effects of middle ear and mastoid infections, not only as regards life itself but also in respect to permanently diminished hearing which frequently follows prolonged suppuration, and which is attended by social and economic disadvantages.

One who uses chemotherapy should acquaint himself with the proper procedures of *therapeutic and clinical application and in addition observe the surgical requirements of adequate drainage by myringotomy during the early stages and mastoidectomy as soon as operative mastoiditis is determined. N. S. W.

HEALTH AND THE PUBLIC

Generalities Applicable Alike to Physician and Patient

The term "public health" has a wide range of implications. Winslow has defined it as "the science and art of preventing disease and promoting physical health and efficiency through organized community effort for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and the development of social machinery which will insure to every individual a standard of living adequate for the maintenance of health."

These are generalities. Unfortunately, most physicians think of them only as generalities, and rarely in terms of their application to themselves or their patients as individuals. More specifically, they believe that "public health" is simply a matter of passing the necessary laws to get the desired results. The fallaciousness of such a belief is obvious. Everyone knows, for example, that one cannot achieve morality by legislation alone. Laws can help to safeguard morals, but fundamentally morals depend upon the proper education and training of the individual. Likewise, "public health" in its greatest measure cannot be achieved by laws alone; it also requires the intelligent co-operation of as many as possible of the individuals who constitute the public. Their fullest co-operation cannot be achieved except through their education and training in health matters.

Whose responsibility is this? In part, it is the responsibility of the constituted public health authorities. But in a large measure it is the responsibility of the medical profession, both in its organizations, the county medical societies, and more particularly as individual physicians in their daily contacts with patients.

A few examples will serve to call attention to the constant and ever recurring need for the education of the public.

The control of diphtheria is a major triumph in the field of public health. It is the result of years of effort by health departments, medical organizations, and physicians in publicizing and applying the achievements of medical science. But we cannot speak of a conquest of diphtheria. For ages to come, diphtheria will be a threat, because the tropics, where diphtheria is a relatively mild disease, will always be a reservoir of infection. With increasing ease carriers can bring to temperate climes the bacteria which here will develop into virulent strains. Each year sees the birth of countless infants who are not immune. Each year therefore must see in every city, town, and township a renewal of the never ending campaign to protect them.

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* A working basis for adult outpatient dosage of sulfanilamide (with an equal amount of bicarbonate of soda) is 10 grains 3 times a day for 3 or 4 days, then 5 grains 3 times a day. Hospital patient dosage is one grain per pound of body weight usually given in 6 equal doses over 24-hour periods. Results are enhanced by limiting the fluid intake. Undesirable effects of the drug are, briefly, loss of appetite, weakness, nausea and vomiting, drug fever, marked fall in hemoglobin, dermatitis, agranulocytosis, hemolytic anemia and jaundice, hematuria, renal calculi, and peripheral neuritis.

Yet there is evidence of a lagging of our zeal in prosecuting this campaign. Surveys of school children play a useful part in discovering and protecting non-immunes. But it is a medical axiom that the threat is greatest to the child during the first two years of its life. Yet our school surveys in various communities show in recent years a progressive falling off in the number of school children who were immunized in infancy.

It is high time, therefore, that there be a renewal of interest. Local health departments continue to show a commendable activity. The State Health Department might do well to give additional help by making it a departmental routine to notify by postcard the parents of children, when these have reached the age of 6 months, that the time has come when diphtheria prophylaxis ought to be administered. This can be done on the basis of birth certificates filed in the Bureau of Vital Statistics. It is being done with great success in some states.

The medical profession, however, should put forth its best efforts. Of course, every county medical society every year should, and usually does, carry out a campaign for diphtheria control. But, above all, the individual physician must use to best advantage his unique opportunity for personal contact with the layman in his practice. He should make a *systematic* and direct appeal each year to the parents of the children at whose delivery he has functioned in that year.

Vaccination against smallpox presents a similar challenge to the individual physician. Successful vaccination is, of course, a prerequisite in Pennsylvania for admission of a child to our schools. But, again, the best time to vaccinate the child is in infancy. Systematic appeal to parents of infants can best be made by the family physician, aided if possible by a reminder from the State Health Department.

The public has the right to expect that its health authorities safeguard its water and food supply. The problem of a safe water supply has in general been adequately met. But the safeguarding of the food supply is constantly beset by difficulties. Not that there are not in many communities adequate laws and law enforcement to insure clean and wholesome foods —for years many state and local authorities have labored patiently and earnestly to that end —but from time to time some producers and purveyors of foods, motivated by financial gain rather than the welfare of the public, have sought to circumvent or abolish the laws that would assure the safety of their products. At this writing there is before the Pennsylvania Legislature a bill (HB No. 481) that would nullify the work of years in many communities to guarantee clean milk for their citizens, in that it would repeal all local ordinances whose requirements exceed those of the proposed new state law for milk sanitation. Yet the proposed new law makes no provision for the examination of milk handlers, or requirements for proper pasteurization, or control of cleanliness by authorized bacterial counts on milk samples, or a number of other fundamental things in milk sanitation.

Here, then, is another type of problem that calls not only for constant vigilance but also for systematic educational efforts on the part of medical societies and of all physicians as individuals. Just as each year brings a new crop of non-immune infants into the community, so each election furnishes our legislative bodies with a new group of lawmakers who are uninformed in matters of public health.

In the last analysis, the health of the public is a matter of the health of the individual. To achieve it, there is needed the intelligent cooperation of the individual, be he private citizen or legislator. To instruct these individuals is the duty of every medical society and of every single physician. R. A. K.

SIGNED EDITORIALS

Beginning with this issue, the Journal is adopting the policy of identifying editorials written by contributing editors with the initials of the writer. Another change beginning in this issue is the listing of the editorial staff on the editorial page rather than in the front section of the Journal. It will be a simple matter, therefore, for the reader to identify the authors of contributed editorials.

At this time we want to give credit to the following authors of editorials published since the system of contributing editors was inaugurated: Eugene P. Pendergrass, author of the editorial entitled "The Cyclotron" published in the March issue; David M. Davis, author of the editorial entitled "Geriatrics and Urology" published in the April issue.

MEDICOFILM SERVICE

The recent organization of Medicofilm Service through the generosity of "Friends of the Army Medical Library" has removed the obstacle of distance as if by magic. Vast resources of literature are now available not only to medical research workers who live in the shadow of our nation's Capitol but also to those in the most distant parts of the land.

This is a nonprofit organization with the sole purpose of advancing science. A weekly list of more than 4000 medical and related periodicals is supplied in order to show the articles which are available.

The service consists of copying photographically on 35 mm. moving picture microfilm the desired articles or pages. In this compact form the literature can be mailed to interested persons. The moderate charge of 30 cents for each complete article not over 30 pages long and 10 cents for each additional 10 or fewer pages is made to defray the costs of labor, materials, and distribution.

The enormous advantages of the plan are obvious. It will place more literature at the disposal of a greater number of workers and at the same time will leave the reference department of the library itself intact.

A magnifier enlarging to 5 or more diameters or a projecting apparatus may be used to read the microfilms. These are priced as follows: Highly perfected projector, $100 (a simplified model may soon be on the market for $25); special monocular viewer, $1.50; with handle and eye shield, $2.

Medicofilm Service is located in the Army Medical Library, 7th Street & Independence Avenue, S. W., Washington, D. C. Further information can be obtained from that address.

LAST WORDS TO A JURY

The trial of 18 members of the American Medical Association who were either active in the affairs of the A. M. A. or one of its component societies, the District of Columbia Medical Society, was completed April 4. This trial, based on charges by the Federal Department of Justice of offenses against the Sherman Act through "conspiracy in restraint of trade," had its beginning Feb. 5, 1941. Through the 8 weeks that elapsed the jury in the United States District Court at Washington, consisting of 10 men and 2 women, listened to the testimony from 118 witnesses and examined 747 documents submitted as evidence.

This trial, one of the longest on record in the nation's Capitol, constantly attracted front-page attention from all the newspapers in the District of Columbia and at its conclusion was described as epochal in character.

The verdict, now well known to and freely discussed by readers of the Journal, was at the time of this writing looked upon as one of expediency not unlike other verdicts frequently referred to as "Scotch verdicts," which may be generously interpreted by the public as "not guilty, but pay the costs."

We found it interesting to scan the news columns printed on the day the trial was concluded and to review therefrom several of the "last words" addressed to the jury:

Ten hours were spent by opposing counsel in their final exhortation of the jury, to which the judge added an hour and 10 minutes of the law as applied to the case.

The leading attorney for the defense in his conclusion said to the jury as he asked acquittal:

> "They are Christian gentlemen who have spent their lives for the public good. . . . I ask you that by your verdict they shall be found free of this vile, this unnecessary, this sadistic accusation which would crush them to the grave."

The speaker for the prosecution concluded to the jury:

> "These doctors were juggling with medical politics. All they did was plot on economic questions. They wanted to brand as unethical, as immoral, any plan that would cut into their purse."

The court concluded instructions to the jury with these words:

> "In your deliberations, give thought to the views of your fellow jurors. . . . By full and free discussion apply your best reason and judgment. Without sympathy or prejudice, calmly and dispassionately reach the common understanding as to the truth, and return a verdict according to the evidence, so help you God."

The marshal of the court, replying to a message from the jury room implying disagreement after 9 hours' deliberation, said to the jury, "Arrangements have been made to keep you overnight in a hotel."

Two hours after the receipt of this realistic information from the officer of the court, the jury gave its verdict now known to all the world: "The 18 defendants, not guilty; the District Medical Society and the American Medical Association, guilty."

That the last words or the final developments on the far-reaching effects of this verdict have not been recorded is perfectly obvious. Bearing in mind that the earlier indictment by the Grand Jury included joint indictment of the medical societies and several individuals responsible for their administrative activities, it will no doubt remain difficult for a long time for the working minds of many to appreciate just how and when and why an organization may be declared guilty of conspiracy and in the same breath its administrative officers and representatives be declared innocent.

No doubt attorneys for the medical societies will in due time ask to have judgment set aside or suspended or to have a new trial, and by the same token few would be surprised if representatives of the Department of Justice would sooner or later attempt to find the American Medical Association guilty of offense against Interstate Commerce or even to dissolve the association. On one point it is not difficult to remain optimistic; namely, that the department will not soon bring similar charges of conspiracy, et cetera, against other nationally known and nationally active organizations—organizations that not only attempt, as do the medical societies, to decide who shall attain or maintain membership but which go many steps further—maim or kill fellow workers who refuse to "join up." Of course, their members number millions and they vote largely en bloc, while the 116,000 American Medical Association members remain individualists.

THE DOCTOR AS A CITIZEN

Physicians, it is sometimes charged, show scant interest in the cultural life of the community. Time was when the doctor, like the clergyman or the teacher, was a civic leader whose opinions on art, politics, or philosophy were eagerly sought. In reviewing the history of The Medical Society of New Jersey, one notes, for example, that the eighteenth century physician was often a mayor, an alderman, or a congressman; and always an active, public-spirited citizen.

Today's complaint is that doctors are too narrow. "Whenever M.D.'s get together," runs one grievance, "they talk of nothing but medicine." We do not know how true that is, but we do know that if physicians lose touch with wide civic problems, it will threaten their prestige and ultimately lead to their classification as plodding technicians.

Two possible remedies may be suggested:

1. Let medical societies—county or private—more often listen to nonmedical speakers on community questions.
2. Let medical organizations more actively participate in civic affairs.

Thus, the Society of Surgeons last month, under the leadership of Dr. Sprague, invited Eric Sevareid to discuss the current European situation. Here was a thought-provoking, nonmedical talk topping off a full day of surgical demonstrations and scientific papers. It set up a healthy ferment of fresh discussion, and served notice that we doctors are citizens with a tremendous stake in the community. We demonstrated an intelligent interest in the body-politic as well as in the body-biologic.

Your Public Relations Committee furnishes medical speakers to nonmedical groups. We doctors address bankers and barbers, lawyers and laymen, teachers and typists; and yet we seldom ask nonmedical speakers to tell *us* anything about nonmedical subjects. Why not?

Participation, furthermore, should be active as well as passive. It is good to see the Academy of Medicine of Northern New Jersey co-sponsor the Town Hall—and not just the Lahey meeting, but also the forums at which such varied authorities as Erika Mann, Eve Curie, and Clifton Fadiman spoke. The Academy, one of a select list of participating civic organizations, announced in effect that doctors are citizens, too. In varying scale, this kind of participation is open to any medical organization. Any county society or private medical club can co-sponsor a civic activity to its own great advantage as well as that of the community.

To win public admiration for our scientific skills is not enough; we must also win respect *as citizens.* If we ignore the welfare and cultural activities of the community, we brand ourselves as civically irresponsible medical mechanics. By plunging into the intellectual life of the community, we can earn a solid place in the minds and hearts of our fellow citizens.

A century ago a passer-by tipped his hat as he greeted the doctor in the street. We do not ask for such outward symbols today. But we do want the affection and respect which that hat-tipping implied; and we will get it if we earn it.—*Journal of the Medical Society of New Jersey,* March, 1941.

NATIONAL BOARD APPOINTS COMMITTEE ON CERTIFICATION OF GENERAL PRACTITIONER

At the recent meeting of the executive committee of the National Board of Medical Examiners, a special committee was appointed to study the question of certifying the general practitioner. The committee will confer with various medical authorities and organizations as to the best method of providing some kind of recognition for the progressive, up-to-date, efficient, and well-trained general practitioner. The National Board of Medical Examiners has been urged to organize and administer this work if upon further study it is found to be feasible. Such a certification if undertaken would bear a relation to general practice somewhat similar to the certificates now granted in the various medical specialties by their corresponding national boards.

The chairman of this committee is Dr. Waller S. Leathers, dean of Vanderbilt University School of Medicine. Dr. Louis B. Wilson, director of The Mayo Foundation, has been asked to act as consultant to the committee.—*The Diplomate,* March, 1941.

Deaths from Selected Causes in Pennsylvania

January, 1941

County	All Causes, Excluding Stillbirths	Still-births	Infant Deaths	Maternal Deaths	Cancer	Cerebral Hemor-rhage	Heart Disease	Nephritis	Pneu-monia	Tuber-culosis
Adams	33	2	2	1	6	5	7	2	1	0
Allegheny *	1647	57	95	3	154	114	505	120	158	58
Armstrong	60	3	12	0	5	6	15	5	4	2
Beaver	129	7	11	0	13	7	38	13	14	5
Bedford	37	0	7	0	5	4	10	3	4	1
Berks *	310	14	19	1	27	22	97	18	26	7
Blair	162	5	15	1	12	15	53	7	9	2
Bradford	72	0	3	0	3	7	27	4	4	1
Bucks	91	3	3	0	12	6	38	13	4	0
Butler	73	5	1	1	7	12	18	6	2	2
Cambria *	210	15	16	1	22	14	74	17	11	6
Cameron	9	0	0	0	1	1	3	1	0	0
Carbon	61	4	3	0	7	2	20	3	6	1
Centre	67	1	8	1	3	6	27	3	4	1
Chester *	188	2	13	0	14	16	65	15	16	4
Clarion	32	0	3	0	4	5	8	3	2	0
Clearfield	96	6	4	0	9	10	36	3	6	0
Clinton	36	3	1	3	2	4	11	4	0	0
Columbia	74	3	4	0	6	10	30	2	3	2
Crawford	85	3	4	0	12	6	31	5	6	0
Cumberland	75	2	8	0	5	8	18	9	6	2
Dauphin *	236	5	21	1	18	17	82	22	13	4
Delaware	301	7	18	3	29	29	113	30	16	5
Elk	22	2	1	0	3	2	3	3	1	0
Erie *	174	7	13	1	21	26	42	19	8	6
Fayette	213	11	18	0	14	26	61	14	12	6
Forest	4	0	0	0	1	0	1	0	1	0
Franklin *	84	4	5	1	7	7	26	11	3	0
Fulton	16	0	0	0	0	1	3	1	6	0
Greene	51	3	4	0	3	8	10	7	3	2
Huntingdon	49	1	7	0	5	3	9	7	2	0
Indiana	68	2	8	0	8	3	21	4	2	1
Jefferson	49	6	3	1	5	4	12	6	5	1
Juniata	19	1	1	0	1	1	5	1	3	1
Lackawanna	354	9	29	0	29	24	127	31	21	13
Lancaster *	255	7	25	1	24	26	73	20	13	6
Lawrence	94	3	2	0	13	5	27	7	5	4
Lebanon	93	2	7	0	12	14	24	9	4	1
Lehigh *	207	9	10	2	18	26	78	11	14	3
Luzerne	453	21	27	0	28	28	144	47	30	9
Lycoming	113	4	8	0	11	6	39	5	9	1
McKean	45	3	2	0	5	7	18	1	1	1
Mercer	115	0	3	1	9	10	34	12	5	3
Mifflin	65	1	8	1	5	6	19	1	4	0
Monroe	23	0	2	0	4	2	7	1	1	0
Montgomery *	294	8	19	1	32	28	94	32	16	5
Montour *	46	4	1	0	7	3	14	3	4	0
Northampton	149	1	8	0	14	12	59	6	4	1
Northumberland	145	5	7	0	8	16	60	18	6	1
Perry	24	0	1	0	5	2	6	1	4	2
Philadelphia *	2601	57	111	8	262	151	995	202	192	111
Pike	5	0	0	0	1	1	0	1	0	0
Potter	21	1	2	0	4	4	5	3	1	0
Schuylkill	277	4	21	1	20	15	86	22	18	9
Snyder	14	1	2	0	3	0	3	1	1	0
Somerset	88	5	6	0	9	5	22	11	10	3
Sullivan	0	0	0	0	0	0	0	0	0	0
Susquehanna	34	1	0	0	3	1	16	1	2	1
Tioga	36	2	4	0	3	2	12	2	2	0
Union	26	1	3	0	2	4	10	1	2	1
Venango *	73	2	6	1	6	10	16	8	7	0
Warren *	36	1	4	0	8	1	9	0	4	0
Washington	210	7	10	0	19	18	72	14	9	1
Wayne *	33	0	1	0	5	5	8	2	3	1
Westmoreland *	275	22	15	5	23	21	86	24	14	7
Wyoming	16	1	1	0	0	2	9	2	0	0
York	185	11	4	0	20	21	55	14	10	4
Institutions	218	0	0	0	13	6	47	15	31	45
State total	11,456	377	680	40	1069	889	3793	909	808	353

* Exclusive of deaths in state and federal institutions.

TUBERCULOSIS ABSTRACTS

A Review for Physicians

PREPARED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Published through the co-operation of the Pennsylvania Tuberculosis Society
and The Medical Society of the State of Pennsylvania

THE parable of the sower served Osler well in his effort to explain the protean nature of tuberculosis. The interplay between seed and soil, both highly variable, accounts for the infinite variety of pathologic patterns seen in this disease. Of late, so much emphasis has been placed on the rôle of the seed (tubercle bacillus infection) that interest in the soil has probably been slighted. For that reason two timely papers concerned with the influence of nutrition on the development of tuberculosis merit attention. Space permits little more than a summary of the conclusions of these articles.

CONSTITUTION AND DIET IN TUBERCULOSIS

Resistance to disease may depend upon many things, but probably the most important, all other things being equal, is the inherited constitution. This belief is based on epidemiologic studies, family records, studies of identical and fraternal twins, and animal experimentation. Excellent examples of each are cited and interpreted by the author.

The constitution can, however, be modified by outside influences not the least of which is the food we eat. That diet does influence the cause of tuberculosis has been well demonstrated by students of the problem during economic depressions and war.

For example, Denmark's experience during the World War is significant. In the belligerent countries the tuberculosis death rate rose steadily and reached its peak in 1918. In Denmark also the rate rose but the peak was reached in 1917 and fell precipitately. From the beginning of the war Denmark exported great quantities of butter, cattle, and bacon; margarine replaced butter in the diet. There was loss of vitamins A and D. The consumption of meat and fish fell off. In 1917 the blockade interfered with exportation. The consumption of butter in Denmark promptly quadrupled, and that of meat increased almost fivefold. Total calories consumed did not vary much. All other factors that might influence the tuberculosis rate were accounted for. The consumption of meat and fish seemed to parallel the mortality curve inversely—the consumption of vegetables did not.

Isolation of the patient with open tuberculosis has reduced the chances of infection in others and has lessened perhaps the infecting dose and the possibility of repeated infections. Moreover, as the generations have come and gone, natural laws have acted to weed out the susceptibles. Better dietary habits, especially during the past 20 years, have enhanced inborn resistance to all diseases including tuberculosis. These two factors, the inherited constitution and the better understanding of nutrition, have played their part in the reduction of the tuberculosis mortality rate.

Constitution and Diet in Tuberculosis, by Fred H. Heise, M.D., Amer. Rev. of Tuber., February, 1941.

VITAMIN C AND TUBERCULOSIS

As healing in tuberculosis is characterized largely by the formation of connective tissue, and the latter is formed by the action of vitamin C on fibroblasts, it does not seem unreasonable to suspect that a vitamin C deficiency may be one of the causes of unfavorable trends in tuberculosis, if it does not actually contribute to exacerbations of the disease. Replenishment of such deficiency may help to change the disease from an unfavorable to a more favorable one. This reasoning led to a study of vitamin C in health and disease in addition to extensive therapeutic experiments made in a large series of cases of pulmonary tuberculosis.

The authors summarize previous studies of vitamin C—the normal daily requirements, the requirements in tuberculous individuals, results of analysis of organs for vitamin C, and other phases of the subject.

In the first phase of the experiments 98 carefully selected tuberculous persons were divided into 3 groups, as impartially as possible, and members of the groups were matched as closely as possible. One group received daily, in addition to the general hospital diet, 500 c.c. of a synthetic orange-flavored preparation, to which was added an amount of crystalline vitamin C equivalent to the vitamin C in the same volume of fresh orange juice. A second group received daily, in addition to the general hospital diet, 500 c.c. of freshly prepared orange juice. The third group received, in addition to the general hospital diet, 500 c.c. of the orange-flavored preparation without vitamin C (the control group). Of the 98 patients, 60 remained to the end of the 6 months' experiment period.

In analyzing the charts at the end of the experiment, there is so much similarity of the 3 groups that they are practically interchangeable. While there was a greater number of cases in the orange and vitamin groups showing a favorable hematinic effect, the average loss or gain was not sufficient to record by any laboratory means over the whole course of treatment.

An empiric method of calculation revealed also that there was little change roentgenologically between the composite figures of the 3 groups.

As to the clinical results, the weight gain or loss is the only factor that gives any precise information that can be tabulated. The patients remaining to the end who were not molested in some way by treatment or other interferences were compared in the table.

Of 23 patients remaining on orange, 10 (43.4 per cent) gained weight, 2 (8.7 per cent) were stationary, and 11 (47.9 per cent) lost. In the vitamin group only, 7 (30.4 per cent) gained; 9 (39.2 per cent) were stationary, and 7 (30.4 per cent) lost. Of the controls, 4 (28.5 per cent) gained, 4 (28.5 per cent) were stationary, and 6 (42.0 per cent) lost, respectively. The net result from this particular analysis reveals a similarity of all 3 groups.

A significant fact, however, was that the control groups were more difficult to maintain than the treated groups. That is, certain unsaturated patients of the controls died more quickly, or were otherwise forced to discontinue the treatment, than in the groups saturated from the beginning with vitamin C. Of the cases "carried" for more than 3 months, but not for 6 months, there were 2 deaths in the vitamin group, 3 in the orange group (average 2.5), and 7 in the control group.

Two more mass experiments were carried out in slightly earlier cases. There was no essential difference in the final result.

The authors' conclusions include the following:

The observations justify the tentative recommendation that no patient should have less than the optimum standard dosage of 0.84 mg. per kilogram of body weight a day (50 to 60 mg. total) and that the quantity of the vitamin should be increased to 200 mg. a day progressively with the severity, activity, and duration of the disease.

It was found that in saturation there was roughly 5 mg. of vitamin C per hundred grams of total body tissue, which would represent a total quantity of 3 to 5 Gm. in the normal body. Without supplementary administration of vitamin C, this quantity is dissipated in advanced tuberculosis before death, sometimes to a negligible quantity.

Frequently, when the disease is far advanced, patients deficient in vitamin C are benefited by being kept saturated with the vitamin, as shown by a prolongation of life of the treated patients over the controls, as well as slightly more favorable clinical and laboratory observations. Adequate vitamin C is therefore just one of the many factors necessary for a proper treatment of tuberculosis.

No benefit was noted in an excess beyond saturation.

The Body Economy of Vitamin C in Health and Disease, by Henry C. Sweany, M.D., Charlotte Louise Clancy, M.D., Molly H. Radford, M.D., and Viola Hunter, M.Sc., Jour. of Amer. Med. Assn., Feb. 8, 1941.

Reduced Number of Hospital Interns and Residents Creates Service Problem

1941 Senate Bill No. 575 Attempts to Ameliorate the Situation

To the Members of The Medical Society of the State of Pennsylvania:

The situation touched upon in the above headlines has not developed overnight but has been accumulating throughout at least the past 10 years. It was first activated following interpretations by the Board of Medical Education and Licensure of Pennsylvania, acting on advice of the Department of Justice, of Pennsylvania's Medical Practice Act as amended in 1935 (see April, 1934, JOURNAL, page 603).

The dissatisfaction became so acute that early in 1938 the Board of Trustees, as the result of a request from the Philadelphia County Medical Society, prepared a brief on the subject which was addressed to the then Attorney General of Pennsylvania (see pages 748-50, May, 1938, JOURNAL). This brief not only discussed the rulings of the Board of Medical Education and Licensure on the question of licensure for hospital interns and residents but also discussed laboratory service without benefit of direction by a licensed physician. These subjects were also discussed freely in the 1940 session of the House of Delegates of The Medical Society of the State of Pennsylvania (see pages 320-24, December, 1940, JOURNAL).

The above bibliography is here referred to for the benefit of those desiring to make a complete study of this important question.

For the information of others the appended quotations from minutes and correspondence will briefly but clearly set forth the points at issue as they have been rather widely distributed to hospital administrators and medical practitioners throughout the state by representative committees of the Pennsylvania Hospital Association and The Medical Society of the State of Pennsylvania.

We bring this most important subject to the attention of our 9500 members because too often members of The Medical Society of the State of Pennsylvania have heard charges that "action is taken without due study and conference." Recently such a charge has been made against representatives of the State Medical Society by Representatives of the Pennsylvania Hospital Association concerning Senate Bill No. 575.

To a more or less discouraging degree members of the State Medical Society have accepted, without consulting representative officers or committeemen of their own county or state medical societies, such baseless criticisms by those outside the profession who might readily be suspected of having a selfish interest in lowering the standards of medical service in hospitals.

We append:

(1) Quotations from Minutes of Special Meeting of Board of Trustees of The Medical Society of the State of Pennsylvania held Apr. 1, 1941;

(2) Communication addressed on Apr. 8, 1941, by Chairman of Public Health Legislation Committee of The Medical Society of the State of Pennsylvania to—

(a) President of each county medical society.

(b) Secretary of each county medical society.

(c) Editor of each county medical society bulletin.

(d) Chairman of each county medical society Committee on Public Health Legislation.

(e) Chief of medical staff of 217 Pennsylvania hospitals.

(3) Letter addressed Apr. 16 by Chairman of Public Health Legislation Committee of The Medical Society of the State of Pennsylvania to members of the Senate of Pennsylvania;

(4) Letter addressed Apr. 19, 1941, by Chairman of Committee on Public Health Legislation of The Medical Society of the State of Pennsylvania to members of the Senate of Pennsylvania.

If the amendments are enacted, the effect will be as set forth in Exhibit A.

It is sincerely hoped that all members of The Medical Society of the State of Pennsylvania, but more especially the 5000 members who are believed to have working connections with the approximately 400 hospitals scattered throughout Pennsylvania (only 6 counties have no hospital), *will study this material,* all of which may be found permanently in the pages of THE PENNSYLVANIA MEDICAL JOURNAL (the latest in the May, 1941, issue), *and communicate their*

A preprint of pages 1035 to 1038 was mailed on Apr. 28 to the members of the State Medical Society.

conclusions to local hospital management in order that Pennsylvania's Medical Practice Act may, when amended, continue an instrument of protection to all the people of Pennsylvania.

Sincerely yours,
Francis F. Borzell, *President,*
Rorert L. Anderson, *Chairman,*
Board of Trustees,
Walter F. Donaldson, *Secretary.*

EXHIBIT A

The Medical Practice Act

The enactment of the proposed amendments to the Medical Practice Act will accomplish the following:

Defining certain terms, imposing certain additional duties upon the State Board of Medical Education and Licensure, further regulating the status of student interns, requiring foreign applicants to complete their citizenship, making provision for graduate students from other states and Canada, and providing for automatic revocation of registration in case of mental incompetency.

Definitions

This act shall be known and may be cited as the "Medical Practice Act."

The term "board" as used in this act shall mean the State Board of Medical Education and Licensure in the Department of Public Instruction, originally known as the Bureau of Medical Education and Licensure but later created, appointed, and organized in accordance with the provisions of the Administrative Code.

The term "medicine and surgery" as used in this act shall mean the art and science having for their object the cure of diseases of and the preservation of the health of man, including all practice of the healing art with or without drugs except healing by spiritual means or prayer.

As used in this act the terms "physician," "physician and surgeon," "doctor of medicine," or "doctor of medicine and surgery" are defined to mean an individual licensed under the laws of this Commonwealth to engage in the practice of medicine and surgery in any and in all its branches and who has been graduated from a reputable legally incorporated medical school or college recognized as such by the board, has served a student internship as required by this act in an approved hospital, has passed the examination for licensure and received a license to practice medicine and surgery in any and all of its branches in this state, or who is licensed by endorsement by the board to practice medicine and surgery in this state, or an individual from a foreign country who after examination has been licensed by the board to practice medicine and surgery in any and all its branches in this state, or an individual practicing medicine and surgery in any and all its branches who is exempted from licensure under this act.

The term "student intern" as used in this act shall mean anyone who is pursuing a course in an approved hospital as required by this act of an applicant for licensure to engage in the practice of medicine and surgery in this state.

Student Interns

A student intern with the approval of the board may continue as such in any legally incorporated hospital or state hospital in this Commonwealth but only until a license is received from the board and only when the required examination is taken at the first opportunity after the expiration of the student intern course required by this act.

If, however, the student intern does not take the examination by the time of the first opportunity offered by the board or shall have failed in such examination or for any reason provided for in this act shall not receive a license to practice medicine and surgery in this state, such student intern shall automatically lose all these privileges of a student intern and thereafter as to future examinations shall be subject to the provisions of this act relating thereto.

Applicants from Foreign Countries

Applicants from countries foreign to the territory of the United States who desire to be licensed by said board are required by this act to present a certificate of United States citizenship or a declaration of intention, which declaration must be completed and full citizenship received within 7 years after its issuance.

Temporary Certification of Physicians for Postgraduate Courses

Physicians who are legally authorized to practice medicine and surgery in other states of the United States and Canada and who are in training for certification in special departments of medicine and surgery in institutions approved by the board shall receive a special certificate that is limited to said training and for the period of time required for this training after the payment of a fee established by the Department of Public Instruction and shall thereupon report annually to the board until the course is completed.

If such a physician desires to remain in Pennsylvania and practice medicine and surgery after completion of the course, a certificate to practice medicine and surgery under this act shall be issued provided the applicant shall have met all the requirements of this act and shall have paid a fee established by the Department of Public Instruction for such license.

Revocation of Registration

The registration to practice medicine and surgery shall be automatically suspended upon the legal commitment to an institution of a licensed physician because of mental incompetency from any cause, upon filing with the Department of Public Instruction a certified copy of such commitment. Restoration of such registration shall be made in accordance with Section 8 of this act as in the case of revocation or suspension of licensure.

Act 230—Pennsylvania Legislature—Session of 1935

Act 230 of the 1935 Session of the Legislature provides that a graduate intern or resident physician be on duty at all times in hospitals with 100 beds or more. If this is not observed, it may prevent the Welfare Department from approving the state appropriation to such hospitals. The enactment of the proposed amendments to Act 230 will permit a student intern, as defined in the Medical Practice Act, to serve in one of these hospitals, pending the receipt of his license.

ITEM 1

Quotations from Minutes of Special Meeting of Board of Trustees of The Medical Society of State of Pennsylvania, Held Apr. 1, 1941

"After reviewing the official call for this special meeting, Chairman Robert L. Anderson requested President Francis F. Borzell to report on the activities of the committee authorized by the Board at its Dec. 10, 1940, meeting and its sub-committee. Dr. Borzell stated that 40 representatives of medical schools and hospitals throughout the state, the Chairman of the State Board of Medical Education and Licensure, a Deputy Attorney General, the Secretary of Health, and a number of representatives of The Medical Society of the State of Pennsylvania had met in the Board room at 230 State Street on the afternoon of Dec. 10, 1940.

"At the conclusion of this meeting the sub-committee was appointed, composed of Drs. William S. McEllroy, Chairman, Dean of the University of Pittsburgh Medical School, William G. Turnbull, Charles L. Brown, John B. Flick, Walter Estell Lee, and C. L. Palmer. The sub-committee had met on several occasions in consultation with others.

"Dr. Borzell further stated that the Proposed Amendments to the Medical Practice Act, Item 1 on the Call for the Special Meeting, as they were to be discussed by the Board and those present represented concretely the results of numerous studies, discussions, and alterations, several of which had been made within the past 48 hours." (Minutes published in full in May, 1941, PENNSYLVANIA MEDICAL JOURNAL include the key provisions of proposed amendments.)

ITEM 2

April 8, 1941.

To: Chairman Public Health Legislation Committee,
Component County Medical Society.

CC: President, Secretary and Editor.

SUBJECT: Proposed Amendments to Medical Practice Act.

Dear Doctor:

At the request of President Francis F. Borzell the Board of Trustees of The Medical Society of the State of Pennsylvania authorized the appointment of a committee to study amendments to Pennsylvania's Medical Practice Act whereby physicians seeking certification in specialties by the various American Boards may obtain a *temporary* certificate of licensure in Pennsylvania effective while taking their postgraduate course in this state.

A sub-committee (William S. McEllroy, M.D., Dean of Medical School, University of Pittsburgh, Chairman) has met a number of times and with adequate legal advice has drafted amendments to the Medical Practice Act which will enable the Board of Medical Education and Licensure to grant to graduate students applying for such certification a temporary Pennsylvania license if previously licensed in their own state.

During the discussions concerning amendments to the Medical Practice Act a number of other items were considered. Among them is a definition of "student intern." The intern (student) is pursuing a year's internship in an approved hospital as required by the act of applicants for Pennsylvania licensure. After the completion of this student intern course, he or she may with the approval of the Licensing Board serve in any legally incorporated or state hospital in this state while waiting for the next examination for licensure and the receipt of a license therefrom as provided for in the act. This gives the student intern an opportunity to serve either in an approved or an unapproved hospital during the period of time he is waiting to hear from his completed examination for licensure. As the act now stands such intern cannot legally do this.

Apparently there is current a movement by certain hospitals in Pennsylvania interested in having unlicensed interns serve for a more or less indefinite period and for reasons of economic interest to the management. This we think is not in support of high standards of service to the public through these hospitals because there have been instances where these so-called interns, unable to obtain a license, have continued to serve illegally for a number of years.

It has come to our attention that material has been mailed to hospital administrators throughout the state which tends to create confusion regarding the application and force of amendments as proposed.

Please be assured that our committee and sub-committee have conferred with the President and Secretary of the Pennsylvania Hospital Association and are in frequent consultation with medical school and hospital representatives, the Board of Medical Education and Licensure, the Department of Education, the Health Department, the Department of Justice, and have formal approval, as late as Apr. 1, of the proposed amendments by the Board of Trustees of The Medical Society of the State of Pennsylvania.

C. L. PALMER, *Chairman,*
Committee on Public Health Legislation,
The Medical Society of the State of
Pennsylvania.

ITEM 3

Apr. 16, 1941.

Dear Senator:

At the request of President Francis F. Borzell, the Board of Trustees of The Medical Society of the State of Pennsylvania authorized the appointment of a committee to study amendments to Pennsylvania's Medical Practice Act whereby physicians seeking certification in specialties by the various American Boards may obtain a *temporary* certificate of licensure in Pennsylvania effective while taking their postgraduate course in this state. According to present opinions, this cannot be granted.

A sub-committee (William S. McEllroy, M.D., Dean of Medical School, University of Pittsburgh, Chairman) has met a number of times and with adequate legal advice has drafted amendments to the Medical Practice Act which will enable the Board of Medical Education and Licensure to grant to graduate students applying for such certification a temporary Pennsylvania license if previously licensed in their own state.

During the discussions concerning amendments to the Medical Practice Act a number of other items were considered. Among them is a definition of "student intern." The intern (student) is pursuing a year's internship in an approved hospital as required by the act of applicants for Pennsylvania licensure. After the completion of this student intern course, he or she may with the approval of the Licensing Board serve in any legally incorporated or state hospital in this state while waiting for the next examination for licensure and the receipt of a license therefrom as provided for in the act.

This gives the student intern an opportunity to serve either in an approved or an unapproved hospital during the period of time he is waiting to hear from his completed examination for licensure. As the act now stands such intern cannot legally do this.

The changes also include some minor clarifying amendments in order to conform to various court opinions and other acts passed since the present Medical Practice Act was last amended in 1935. The definitions of medicine and surgery, physicians, etc., as included, conform to Act 282 "The Statutory Construction Act" of 1937.

A number of sections of the original Medical Practice Act have been supplanted by the Administrative Code and the Fiscal Code. It is proposed that all this so-called "dead wood" be removed in order to bring the act up to date. All these are embodied in Senate Bill 575.

Act 230 of the 1935 session of the Legislature is also amended to conform to the provisions in Senate Bill 575.

We earnestly request your support of these measures.

Please be assured that our committee and sub-committee have conferred with the president and secretary of the Pennsylvania Hospital Association and are in frequent consultation with medical school and hospital representatives, the Board of Medical Education and Licensure, the Department of Education, the Health Department, and the Department of Justice.

C. L. Palmer, M.D., *Chairman,*
Committee on Public Health Legislation,
The Medical Society of the State of
Pennsylvania.

ITEM 4

Apr. 19, 1941.

Dear Senator:

Since last week, word has been received that some of the smaller hospitals desire exemption from licensure of student interns for the period of one year. The following are suggestions for your consideration regarding the one-year exemption period.

First, the committee thinks it advisable that student interns, after finishing their course as student interns, should, while the subject is still fresh in their minds, take the examination for licensure as soon as possible either in this state or in the state in which they desire to practice.

Second, in the past, some of the smaller hospitals have been known to employ unlicensed physicians as residents or interns for a number of years. Under this régime, after a period of time, these interns—although unlicensed and not individually responsible under the law—begin to take on responsibilities such as surgical operative procedures.

Third, any approved hospital or any legally incorporated hospital can make agreements under the provisions of Senate Bill 575 for interns previous to their taking the examination for licensure at the first opportunity and receipt of license thereafter to serve for one year, which service can be rendered even after they are licensed to practice medicine and which may readily be extended under these circumstances as long as the licensed individual is willing to serve.

Fourth, in order to make the service one year for an unlicensed individual, we find many confusing circumstances will arise. According to the present Medical Practice Act and Senate Bill 575, the Board shall give examinations twice yearly. These are usually given in July and January. One of these student interns coming from another state with the approval of the Pennsylvania Board may go into a hospital in July after the examination for licensure held by the Pennsylvania licensing Board. He might then serve until the same date the following July, which will be after the January examination and the July examination. If the period of his service is completed in July after his examination, he cannot legally serve any longer and may be roaming around the state without a license until 6 months later in January.

These and many other instances have convinced the committee that to make this service for a period of one year without a license will be very difficult, create a lot of work on the part of the Medical Board while keeping track of these individuals throughout the state, and would not be in the best interests of the individual or the public. It will be very difficult to word in proper phraseology any provision that would definitely limit an individual to one year's service and still meet all the conditions which might arise. This, we think, will open the way toward lowering the quality of service available in these hospitals.

Please be assured that we have given all these questions very wide and careful consideration with others informed and interested. We hope you will see your way clear to vote for this bill.

C. L. Palmer, M.D., *Chairman,*
Committee on Public Health Legislation,
The Medical Society of the State of
Pennsylvania.

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, ***Secretary***
8104 Jenkins Arcade
Pittsburgh, Pa.

AMENDMENTS TO CONSTITUTION AND BY-LAWS

In the interim between annual sessions proposals for amendments or alterations to the constitution and by-laws of our society must be sent to the secretary of the society at least 4 months before the next annual session, and must be published in the JOURNAL at least 3 months in advance.

The Official Call for the 1941 Session will be published in the June JOURNAL. It should include all proposals for amendments or alterations, and they should be received by the secretary not later than June 1.

SHARING THE BURDEN

Teamwork Facilitates Examinations of Selectees

As a result of experiences in the city of Erie following the adoption of an increase in the number of registration board medical examiners and the plan for bringing together these physicians and the selectees to be examined, methods of extending such endeavors throughout Pennsylvania have been developed along the following lines:

The appended communication was mailed Mar. 26, 1941, to the chairmen of county medical society preparedness committees throughout Pennsylvania with a copy in each instance to the secretary of the county medical society. Of prime importance is knowledge of the fact that additional examiners may be appointed after consultation with the registration board concerned and with Selective Service Headquarters, Capitol Bldg., Harrisburg.

Since the city of Erie, in Erie County, apparently set the pace in Pennsylvania for this improvement, we publish in full the response of the chairman of the Committee on Medical Preparedness of Erie County and briefly summarize replies from the 38 counties which have at this writing responded.

Erie County

"As you probably know, the group system of examination in the city of Erie is working very well with a minimum of inconvenience to everyone concerned. Sixty-five men are put through in an hour and a half once a week. When it becomes necessary, we expect to have another session. The only other towns in our county which would seem to be of sufficient size to warrant this type of examination would be Union City and Corry, though it is my impression that it might go into even smaller communities if the local physicians would just see the light as to the increased efficiency of such group examinations. I mean that I believe there would be fewer rejections and more culls on first examinations. In even smaller towns, like North East, they might find it advantageous to proceed in the manner that we are doing in Erie.

"Our Advisory Board had its first meeting shortly after we were appointed. The general plan at that time was for the draftees to go to a doctor's private office. Eight men received appointments in Erie, and regardless of the merits of these appointments it seemed to us a great burden on these 8 men and a highly inefficient method even if there were 80 appointees. I brought this up at the Advisory Board meeting and, being chairman of the Preparedness Committee as well, brought forth the idea that we could do this effectively at some convenient place.

"Consequently, the society, largely through the activity of Dr. Norbert D. Gannon, secretary, acquired several rooms at St. Vincent's Hospital for this purpose. The machine did not work well the first time or two because the men were so completely unfamiliar with what the army considers fit, semifit, and unfit. I myself, who had had 19 months of service in the last war, had never done a physical examination and I found, for instance, in the case of classifying feet and backs that I would designate as unfit many men whom the army considered fit. So we got a group of men to volunteer to help, men who are representative of the various specialties, and went to work under the men of higher military experience and the appointees. We made 2 men, who had both the interest and the experience, co-ordinators of the work. Questions were submitted to them and they evolved a system of 6 departments through which the men progressed during the examination.

"We feel that we have a well-oiled system which will handle 65 men in an hour and a half, and it is my impression that we are doing a better job by a good deal than when these men were examined in the various doctors' offices. We are now working to perfect this 6-panel system. The chief of each panel is being held responsible for someone with his clerk being there each time. For instance, in the orthopedic department, I am its head and we have 4 others who function in this examination. It is my responsibility to see that a man and a clerk are there every examining day. We are holding these volunteer examiners completely responsible for being there on time when their turn comes, and if they are unable to serve for one reason or another to effect notice 24 hours in advance, or else there are no alibis.

"In the inception of this organization I pointed out to the society that since we, the people of the United States, through our government had made 16 million subject to draft service with the probability of a standing army of 4 or 5 million needed before we get through, and the fact that these men had to serve at $22 a month, should make every last one of us stand at attention to make outcasts of slackers. I pointed to the fact that we are not asked to serve actively; even though other charity assignments may lie heavily, we are still very well off. We are having splendid co-operation and I feel that we are rapidly evolving an organization which will take care of the extensive work which is bound to come later on, with more or less machine-like precision.

"My only question is whether the nature of our examinations and the nature of our classifications are proceeding as the army wants them. Obviously, this will clear itself up if our acceptances are rejected in Pittsburgh. As these rejections occur, we, of course, will know why they occur and will be able to make corrections at this end. Please rest assured of our co-operation with anything having to do with medical preparedness in this region."

Arthur G. Davis, *Chairman,*
Committee on Medical Preparedness,
Erie County Medical Society.

(Appended Communication)

Dear Doctor:

At a meeting of the Pennsylvania Committee on Medical Preparedness held in Pittsburgh on Mar. 25, it was determined that the chairman of the Preparedness Committee in each county in Pennsylvania should be requested to develop an opinion to be transmitted to our committee as soon as possible regarding the best possible means of

(a) applying from draft board medical examining experiences to date the most practical means of

(b) relieving unnecessary drain upon the time, energy, and skill of draft board examining physicians, and at the same time

(c) stabilizing and improving the technic and quality of such examinations.

It is obvious that draft board medical examining is to be a continuing program and problem.

It is said to have been solved in 2 Pennsylvania counties by the development of teamwork through the efforts of representatives of the county medical society with the assistance of the management of one or more of the hospitals located in the county.

In the city of Erie, for instance, "teams" of examining physicians report on a single afternoon each week at a given time for the purpose of examining registrants from all the local boards of the city of Erie. By this arrangement each team works but one afternoon period every other week.

It is said that under this plan, because of division of labor and the provision of improved facilities, subsequent rejections by army induction boards are diminishing.

It will be seen that the adoption of this plan in any county may require the appointment of additional physicians to certain draft boards. If adopted, recommendees for addition to medical examining staffs should not include physicians already connected with advisory or induction boards.

It is believed that this plan of concentration is applicable in all sections of any county where there exists at least one hospital and a minimum of 2 registration boards.

Our committee regrets the necessity for making its repeated requests upon you and your colleagues, but will deeply appreciate the continuation of your splendid co-operation as well as that of other officers and members of your county medical society.

We hope for a prompt return of your response to the enclosed brief form.

Charles H. Henninger, *Chairman,*
Francis F. Borzell,
Walter F. Donaldson,
Pennsylvania Committee on
Medical Preparedness.

Mar. 26, 1941.

(Form)

To the Pennsylvania Committee on Medical Preparedness:

It is / is not considered feasible to plan for an early adoption of the "team" method of conducting draft board medical examinations in .... County.

It should be applicable at least to the following towns in our county and their nearby districts:

Additional comments, questions, or suggestions:

Signed ...., *Chairman,*
Committee on Medical Preparedness,
.... County Medical Society.
Date ....

The following county societies report the teamwork system already in force in one or more registration board districts: Columbia, Crawford, Delaware, Erie, Lackawanna, Venango, and Warren.

From these counties with smaller populations and fewer physicians comes the reply "not feasible or necessary": Bucks, Bradford, Cambria, Carbon, Centre, Chester, Cumberland, Juniata, Lehigh, McKean, Mercer, Monroe, Northumberland, Perry, Tioga, Wyoming, and York.

Other counties, as follows, say "feasible; not in operation but will be considered": Allegheny, Butler, Elk, Lancaster, Lawrence, Lebanon, Luzerne, Lycoming, Mifflin, Montour, Northampton, Somerset, and Washington.

It is interesting to note the usual reactions that follow experiences of individual physicians, or 2 or 3 or 4 working together:

Delaware County: "Feasible and operating as far as possible in Boards No. 2, 3, 4, and 5. Private laboratories give fine support."

Lehigh County: "Is not feasible; 2 boards now examine in groups; other boards prefer separate examination in private offices. As examining physicians gain more experience, fewer men will be rejected by induction boards."

Luzerne County: "Team method applicable in Hazleton, Nanticoke, Pittston, Wilkes-Barre, Ashley. Since demand for draftees has increased on Board No. 9, have had 3 other physicians appointed to assist me, and starting Apr. 17, 1941, all examinations will be taken care of at the Ashley Town Hall."

Lycoming County: "After the receipt of your letter of Mar. 26 in regard to the advisability of adopting the 'team' method of conducting draft board examinations in Lycoming County, we held a meeting of examiners and discussed this problem. The local Armory was inspected as a possible place for conducting 'team' examinations. One of our examiners, Dr. George Klump, and Mr. Carl Herdic, who is on the local committee in charge of the Armory, went to Harrisburg to interview the proper authorities in regard to getting permission to use the Armory. This authority was granted and a meeting of representatives of the 2 registration boards in the county and the 2 in the city was held and it was decided to try the 'team method.'"

Mifflin County: "Entire county medical society took action Apr. 3 endorsing team method. At present, draftees needing special examination must be sent from Lewistown to Johnstown, Altoona, Huntingdon, or Hollidaysburg. We have in Lewistown qualified specialists in all fields except orthopedics and psychiatry."

Northumberland County: "Not feasible. Board No. 2 has 3 doctors who share light load in their offices. Board No. 3 has staff of 3 physicians each Tuesday. Very satisfactory."

Schuylkill County: "Board No. 6 has 5 examining physicians; registrants are divided between them. Not impressed by proposed teamwork plan. Sure that the quality and technic of examinations will improve steadily as we acquire better understanding of the type of man the army wants. Evidently army officers interpret 'physical standards' much more rigidly than civilian physicians. There are 8 other boards in Schuylkill County."

In a number of instances great credit is given to laboratory technicians who are helping, or American Legionnaires serving the examining group in secretarial capacities.

PAYMENT OF 1941 DUES

Previous to the date of delinquency, 8507 members of the State Medical Society had paid their 1941 county and State Medical Society dues. Of that number, 407 were new members.

Five county medical societies have from their own treasuries paid the state society dues for 1941 of members whose dues were remitted on account of their being called into active military service previous to Apr. 1; namely, Columbia, Beaver, Bucks, Northampton, and Venango.

Nine county medical societies report 100 per cent of their membership paid; namely, Carbon, Centre, Juniata, Lebanon, Monroe, Montour, Perry, Susquehanna, and Warren; in 6 societies, all the members have paid but 1.

We publish below the total active membership of the 60 component county medical societies, and the number in each whose 1941 dues were paid on time:

Society	*Members*	*Members Paid*
Adams	30	29
Allegheny	1515	1484
Armstrong	51	47
Beaver	108	104
Bedford	16	9
Berks	204	200
Blair	115	104
Bradford	43	31
Bucks	81	75
Butler	66	55
Cambria	183	171
Carbon	36	36
Centre	34	34
Chester	109	106
Clarion	27	25
Clearfield	58	54
Clinton	19	14
Columbia	43	41
Crawford	62	60
Cumberland	38	36
Dauphin	230	213
Delaware	250	247
Elk	30	29
Erie	172	158
Fayette	125	115
Franklin	69	68
Greene	29	22
Huntingdon	29	25
Indiana	56	55
Jefferson	48	30
Juniata	8	8
Lackawanna	273	253
Lancaster	216	205
Lawrence	78	69
Lebanon	51	51
Lehigh	181	162
Luzerne	350	319
Lycoming	122	117
McKean	50	47
Mercer	92	89
Mifflin	34	29
Monroe	34	34
Montgomery	267	260
Montour	33	33
Northampton	155	152
Northumberland	79	74
Perry	16	16
Philadelphia	2518	2349
Potter	14	13
Schuylkill	171	139
Somerset	42	38
Susquehanna	17	17
Tioga	27	23
Venango	59	48
Warren	50	50
Washington	148	129
Wayne-Pike	25	21
Westmoreland	192	141
Wyoming	14	13
York	161	159

LIST OF COUNTY MEDICAL SOCIETIES OF PENNSYLVANIA

COUNTY SOCIETY	PRESIDENT	SECRETARY	MEETINGS
Adams	Raymond F. Oyler, Biglerville	Bruce N. Wolff, Gettysburg	Monthly
Allegheny	Frederick M. Jacob, Pittsburgh	George R. Harris, Pittsburgh	Monthly
Armstrong	Benjamin J. Longwell, Seminole	Jay B. F. Wyant, Kittanning	*Monthly
Beaver	Philip F. Martsolf, New Brighton	J. Willard Smith, Beaver Falls	Monthly
Bedford	Edward A. Shields, Bedford	James R. Myers, Everett	Monthly
Berks	Chester K. Kistler, Reading	Clair G. Spangler, Reading	Monthly
Blair	Ralston O. Gettemy, Altoona	Harry D. Collett, Altoona	*Monthly
Bradford	J. K. Williams Wood, Troy	Stanley D. Conklin, Sayre	Monthly
Bucks	Albert A. Gonzalez, Croydon	J. Fred Wagner, Bristol	6 a year
Butler	Max S. Nast, Butler	Ralph M. Christie, Butler	*Monthly
Cambria	William B. Templin, Johnstown	Paul McCloskey, Johnstown	Monthly
Carbon	Susan Tomchik, Lansford	John L. Bond, Lehighton	Bimonthly
Centre	H. Thompson Dale, State College	†Le Roy Locke, Bellefonte	Monthly
Chester	Robert T. Devereux, West Chester	Joseph Scattergood, Jr., West Chester	Monthly
Clarion	Edward J. Keeling, Clarion	James M. Hess, Fryburg	Quarterly
Clearfield	Richard L. Williams, Houtzdale		Monthly
Clinton	Robert F. Dickey, Lock Haven	Henry G. Hager, Jr., Lock Haven	Monthly
Columbia	Howard R. Rarig, Berwick	George P. Moser, Bloomsburg	Monthly
Crawford	Charles E. Mullin, Cambridge Springs	†John C. Davis, Meadville	Monthly
Cumberland	Charles M. Shaffer, Carlisle	Richard R. Spahr, Mechanicsburg	Bimonthly
Dauphin	Howard K. Petry, Harrisburg	Harvey A. Simmons, Harrisburg	*Monthly
Delaware	Franklin E. Chamberlin, Glenolden	†Augustus H. Clagett, Upper Darby	Monthly
Elk	Charles N. Silman, St. Marys	Fred E. Murdock, St. Marys	*Monthly
Erie	James A. M. Russell, Erie	Norbert D. Gannon, Erie	Monthly
Fayette	Fred H. Harrison, Connellsville	John N. Snyder, Masontown	Monthly
Franklin	Frank J. Corbett, Fayetteville	Ambrose W. Thrush, Chambersburg	Monthly
Greene	Vinton P. King, Waynesburg	Albert J. Blair, Waynesburg	Monthly
Huntingdon	Frederic H. Steele, Huntingdon	Donald C. Malcolm, Alexandria	Monthly
Indiana	Frederick S. Shaulis	Joseph W. Gatti, Indiana	Monthly
Jefferson	Sylvester S. Hamilton, Punxsutawney	Francis J. Trunzo, Punxsutawney	Monthly
Juniata	George G. Dawe, Mifflintown	Robert P. Banks, Mifflintown	Bimonthly
Lackawanna	John E. Manley, Scranton	John Lohmann, Scranton	Weekly
Lancaster	Charles S. Duttenhofer, Churchtown	Charles P. Stahr, Lancaster	Monthly
Lawrence	H. Cyrus Harper, New Castle	William A. Womer, New Castle	Monthly
Lebanon	Edward L. Jones, Lebanon	J. DeWitt Kerr, Lebanon	*Monthly
Lehigh	Paul C. Shoemaker, Allentown	J. Frederic Dreyer, Allentown	Monthly
Luzerne	Joseph V. Connole, Wilkes-Barre	Lachlan M. Cattanach, Wilkes-Barre	*Semimonthly
Lycoming	F. Raymond Adams, Watsontown	Stuart B. Gibson, Williamsport	Monthly
McKean	Edward J. Phillips, Bradford	James E. Woodhouse, Bradford	Monthly
Mercer	Jonathan B. Perrine, Grove City	James A. Biggins, Sharpsville	*Monthly
Mifflin	Marlin W. Helfrick, Belleville	John R. W. Hunter, Jr., Lewistown	Monthly
Monroe	Moses J. Leitner, Bushkill	Harold B. Flagler, Stroudsburg	4 a year
Montgomery	George R. Irwin, Bridgeport	Walter J. Stein, Ardmore	*Monthly
Montour	Vincent J. Cassone, Danville	Sydney J. Hawley, Danville	Monthly
Northampton	Arthur B. Hamilton, Bethlehem	Dudley P. Walker, Bethlehem	*Monthly
Northumberland	George M. Simmonds, Shamokin	Mark K. Gass, Sunbury	*Monthly
Perry	William H Gelnett, Millerstown	Catherine Johnston, New Bloomfield	Bimonthly
Philadelphia	Edward L. Bortz, Philadelphia	Henry G. Munson, Philadelphia	*Monthly
Potter	Bernard S. Bretherick, Roulette	J. Irving Bentley, Coudersport	Bimonthly
Schuylkill	Peter B. Mulligan, Ashland	Charles V. Hogan, Pottsville	Monthly
Somerset	Bradley H. Hoke, Jr., Salisbury	Bradley H. Hoke, Meyersdale	Bimonthly
Susquehanna	James J. Grace, Montrose	Abram E. Snyder, New Milford	4 a year
Tioga	Charles W. Sheldon, Wellsboro	Robert D. Leonard, Tioga	Monthly
Venango	Cecil H. Hodgkinson, Oil City	Norman K. Beals, Franklin	Monthly
Warren	Tom K. Larson, Warren	Hilding A. Bengs, Warren	Monthly
Washington	George L. McKee, Burgettstown	Albert E. Thompson, Washington	*Monthly
Wayne-Pike	Hobart N. Owens, Hawley	H. R. Patton, Damascus	Bimonthly
Westmoreland	Paul G. McKelvey, Greensburg	Richard S. Cole, Greensburg	*Monthly
Wyoming	Van C. Decker, Nicholson	Arthur B. Davenport, Tunkhannock	Bimonthly
York	Herman A. Gailey, York	H. Malcolm Read, York	*Semimonthly

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* Except July and August.

† Acting for Secretaries Hoffman, Benz, and Klopp, who are in military service.

A. M. A. MEETS NEXT DOOR TO PENNSYLVANIA

At the ninety-first annual session of the American Medical Association to be held in Cleveland, Ohio, June 2 to 6, 1941, there should develop much of great interest and value to the profession and to the people they serve. The scientific program, divided into 18 scientific sections, will compete for the attendance of 10,000 visiting Fellows of the Association with the more spectacular scientific exhibit. Among the several hundred scientific exhibits will be that of the Commission on Diabetes of The Medical Society of the State of Pennsylvania. Needless to say, the deliberations of the House of Delegates will be fraught with interest and concern in the future part to be played by the American Medical Association in national defense and in the schemes of the Department of Justice.

Members of The Medical Society of the State of Pennsylvania who will represent their society in the House of Delegates are Drs. Robert L. Anderson, Pittsburgh; Francis F. Borzell, Philadelphia; J. Stratton Carpenter, Pottsville; Walter F. Donaldson, Pittsburgh; Charles H. Henninger, Pittsburgh; J. Newton Hunsberger, Norristown; Frank P. Lytle, Birdsboro; Clarence R. Phillips, Harrisburg; Leonard G. Redding, Scranton; Charles G. Strickland, Erie; David W. Thomas, Lock Haven.

County and state medical society members automatically become members of the American Medical Association, but *only those who make formal application for Fellowship* and pay the subscription price for the *Journal of the A. M. A.* become Fellows. None but Fellows may register or take part in the discussions of the scientific sections.

If you do not have a Fellowship card for 1941 you should make use immediately of the application blank which appears in this issue of the Journal.

CONTRIBUTIONS TO MEDICAL BENEVOLENCE FUND

The Committee on Medical Benevolence makes grateful acknowledgment of the following contributions to the fund:

Woman's Auxiliary, Luzerne County Medical Society	$100.00
Woman's Auxiliary, Berks County Medical Society	200.00
Total contributions since 1940 report	$1148.85

CALL TO SPECIAL MEETING

To the Members of the Board of Trustees of The Medical Society of the State of Pennsylvania.

Pursuant to instructions of Chairman Robert L. Anderson in which President Francis F. Borzell joins, formal notice is herewith given of a special meeting of the Board of Trustees of The Medical Society of the State of Pennsylvania to be held at 230 State Street, Harrisburg, on Tuesday, Apr. 1, 1941, at 10 a. m. This meeting is called for the purpose of considering and acting upon the following:

1. Proposed amendments to Pennsylvania's Medical Practice Act. These proposed amendments are the result of careful study and conference on a number of occasions, the last being Mar. 18, 1941, by representatives of The Medical Society of the State of Pennsylvania, including President Borzell and Chairman C. L. Palmer, with others including Chairman Irvin D. Metzger of the Board of Medical Education and Licensure, James H. Thompson, Esq., attorney retained for our Committee on Public Health Legislation, and a representative of the Attorney General's office, and others. It is not considered expedient to distribute copies of the proposed amendments (10,000 words), but several copies will be at hand on Apr. 1 from which complete readings with comparisons may be made during the deliberations of the board.

2. Proper consideration to the preparation of a list of names to be submitted to the Governor of the Commonwealth for his review in the selection of a physician to fill an existing vacancy on the Pennsylvania Board of Medical Education and Licensure.

3. A communication from the president and secretary of the Medical Service Association of Pennsylvania regarding the responsibility for stabilizing the $25,000 balance comprising the assets advanced by The Medical Society of the State of Pennsylvania as the necessary pledge required by the State Insurance Department.

4. Further consideration of the following from the report of the Reference Committee on New Business of the 1940 House of Delegates which was adopted by the House:

> "We beg to note the various recommendations in the report of the trustee and councilor for the Tenth District. Therein is discussed (1) the establishment of an executive committee of the Board of Trustees; (2) the development of a reserve fund and a pension system for the benefit of retired society employees; and (3) the evaluation of our society's present medical defense service. We also recommend that the Board of Trustees consider the feasibility of an organizational study by a competent business analyst (preferably one from another state) of the cost of such services, the benefits likely to be derived therefrom, and to report thereon to the House of Delegates at its regular session in 1941."

5. Consideration of regulations proposed in connection with amendments to Pennsylvania's School Code (see subject IV, item (E), page 3, minutes of Mar. 12, 1941, meeting of the Executive Committee of the Board of Trustees).

Walter F. Donaldson, *Secretary.*

Mar. 21, 1941.

MINUTES OF SPECIAL MEETING OF THE BOARD OF TRUSTEES OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Harrisburg, Apr. 1, 1941

A special meeting of the Board of Trustees of The Medical Society of the State of Pennsylvania was held at 230 State Street, Harrisburg, on Tuesday, Apr. 1, 1941, special notice having been sent out under date of Mar. 21, 1941.

The meeting was called to order by Chairman Anderson.

Those in attendance were: Trustees Robert L. Anderson, John J. Brennan, Cloy G. Brumbaugh, Edgar S. Buyers, Park A. Deckard, Norbert D. Gannon, John P. Harley, Frank A. Lorenzo, Peter P. Mayock, E. Roger Samuel, Laurrie D. Sargent, President Francis F. Borzell, President-elect Lewis T. Buckman, Secretary Walter F. Donaldson, Past President Charles H. Henninger, former Trustee Alexander H. Stewart, Chairman C. L. Palmer of the State Society Committee on Public Health Legislation, Chairman I. D. Metzger of the State Board of Medical Education and Licensure, Attorney James H. Thompson, and Messrs. Perry and Stewart.

After reviewing the official call for this special meeting, Chairman Anderson requested President Borzell to report on the activities of the committee authorized by the board at its Dec. 10, 1940, meeting and its subcommittee. Dr. Borzell stated that 40 representatives of medical schools and hospitals throughout the state, Chairman Metzger of the State Board of Medical Education and Licensure, Deputy Attorney General Barko, Secretary of Health John J. Shaw, and a number of representatives of The Medical Society of the State of Pennsylvania had met in the board room at 230 State Street on the afternoon of Dec. 10.

At the conclusion of this meeting the subcommittee was appointed composed of Drs. William S. McEllroy, chairman, dean of University of Pittsburgh Medical School, William G. Turnbull, Charles L. Brown, John B. Flick, Walter Estell Lee, and C. L. Palmer. The subcommittee had met on several occasions in consultation with Dr. Metzger, Attorney James H. Thompson retained by our society for this purpose, and others.

After commenting on the fact that representatives of the Pennsylvania Hospital Association in attendance at the last meeting of the subcommittee had expressed displeasure because they had not been invited to attend previous meetings, Dr. Borzell stated that the proposed amendments to the Medical Practice Act (item 1 in the Call to the Special Meeting) as they were to be discussed by the board and those present represented concretely the results of numerous studies, discussions, and alterations, several of which had been made within the past 48 hours.

Chairman Anderson then called upon Dr. Irvin D. Metzger. The latter briefly reviewed the situation in which in numerous instances over a number of years quite a few unlicensed physicians had served continuously in the capacity of interns and residents in smaller and unapproved hospitals. He stated that the Welfare Department has been seriously concerned over this situation; namely, the number of persons in this way practicing medicine illegally throughout the state.

Dr. Palmer was next called upon. He stated that since the Medical Practice Act had been enacted in 1911 a number of amendments had been made, but that its interpretation had probably been affected more by court decisions and rulings of the Departments of Education and Justice than by amendments. He said that he thoroughly appreciated the risks encountered on opening the act for amendment at any session of the Legislature, but that the objections raised by graduate medical schools and by approved and unapproved hospitals, added to those more commonly raised by licensed and unlicensed groups who practice the several forms of the healing art, undoubtedly justify a strong and well-prepared endeavor to clarify the situation through amendments bringing the act up to date.

Dr. Palmer further called attention to a brief prepared by the State Medical Society and appearing in the May, 1938, issue of THE PENNSYLVANIA MEDICAL JOURNAL which as long as 3 years ago expressed an endeavor on the part of the State Medical Society to bring about co-ordination of desires and interpretations of the schools, hospitals, and the Medical Licensing Board, respectively.

At this point Dr. Palmer began the reading of the proposed changes in the Medical Practice Act. At numerous times during the reading he was interrupted by questioners, by motions to approve as read, or by motions to alter as read. At the end of 2½ hours of such discussion the amendments as finally approved by the Board of Trustees, if adopted by the 1941 Legislature, would change the short title and definitions in Section 1 of the act to read as follows:

Section 1. Short Title and Definitions.—(a) Be it enacted that this act shall be known, and may be cited, as the "Medical Practice Act."

(b) The term "board" as used in this act shall mean the State Board of Medical Education and Licensure in the Department of Public Instruction, originally known as the Bureau of Medical Education and Licensure but later created, appointed, and organized in accordance with the provisions of the Administrative Code.

(c) The term "medicine and surgery" as used in this act shall mean the art and science having for their object the cure of diseases of and the preservation of the health of man, including all practice of the healing art with or without drugs, except healing by spiritual means or prayer. (Now in statutory Construction Act of 1937, Act 282, a clarification act.)

(d) As used in this act the terms "physicians," "physician and surgeon," "doctor of medicine," or "doctor of medicine and surgery," are defined to mean an individual licensed under the laws of this Commonwealth to engage in the practice of medicine and surgery in any and all its branches and who has been graduated from a reputable, legally incorporated medical school or college recognized as such by the board, has served a student internship as required by this act in an approved hospital, has passed the examination for licensure and received a license to practice medicine and surgery in any and all of its branches in this state; or who is licensed by endorsement by the board to practice medicine and surgery in this state; or an individual from a foreign country who, after examination, has been licensed by the board to practice medicine and surgery in any and all its branches in this state; or an individual practicing medicine and surgery in any and all its branches who is exempted from licensure under this act.

(e) The term "student intern" as used in this act shall mean anyone who is pursuing a course in an approved hospital, as required by this act of an applicant for licensure to engage in the practice of medicine and

surgery in this state and, who, after the completion of this course, with the approval of the board may serve in any legally incorporated or state hospital in this state while waiting for the next examination for licensure and receipt of a license therefrom as provided for in this act.

Upon motion by Dr. Buyers, seconded by Dr. Samuel and unanimously carried, the draft of the proposed amendments as discussed and altered was approved by the Board of Trustees, and Chairman Palmer of the Committee on Public Health Legislation, with the approval of his committee, was authorized to introduce this draft at an appropriate time in the 1941 Legislature.

At this point a motion by Dr. Brennan, seconded by Dr. Lorenzo and unanimously carried, extended to Chairman Palmer a vote of confidence and to President Borzell and the members of the subcommittee the thanks of the Board of Trustees for their efforts in bringing about the proposed amendments. This was followed by a motion unanimously adopted extending to Dr. Metzger and Mr. Thompson also expressions of appreciation on the part of the members of the board for their work with the subcommittee as well as for their attendance and participation in the discussion.

Upon motion duly seconded and carried, the Board of Trustees adjourned to reconvene the same afternoon at 1:45 o'clock.

The Board of Trustees reconvened at 2 p. m. Present were Chairman Anderson, who called the meeting to order, Drs. Brennan, Brumbaugh, Buyers, Deckard, Gannon, Harley, Lorenzo, Mayock, Samuel, and Sargent, President Borzell, President-elect Buckman, Secretary Donaldson, Chairman Palmer, and Messrs. Perry and Stewart.

Item 5 in the Call to the Special Meeting was the first order of business of the afternoon session.

After considerable discussion of the regulations proposed by the Department of Education to implement the School Code Act should it be amended in Sections 1501 and 1503 as proposed, a motion made by Dr. Gannon, seconded by Dr. Harley, was unanimously carried to the effect that the position to be taken by the representatives of The Medical Society of the State of Pennsylvania on the subject of the proposed amendments to the subsequent regulations be referred to the Committee on Public Health Legislation in conference with representatives of interested agencies, such as Mr. German and Dr. Paul Dodds of the Department of Health, Drs. Ralph M. Tyson and Francis T. O'Donnell, the latter two chairmen, respectively, of the State Medical Society's Committees on Pediatric Education and Child Health, also interested representatives of medical services provided by the various types of school districts throughout the state.

The secretary was instructed to inform Dr. O'Donnell that the board would appreciate receipt of a progress report from the Child Health Committee at its next regular meeting to be held on May 13, 1941.

Item 3 of the Call to the Special Meeting, covering the fixation of responsibility for stabilizing the $25,000 balance in securities and cash advanced by The Medical Society of the State of Pennsylvania to the Medical Service Association of Pennsylvania to meet the requirements of the State Insurance Department for a reserve fund, was next brought to attention.

The secretary quoted the legal counselor of the society as stating that the agreement between the society and the association as it stands at present holds the MSAP responsible for the return at the proper time of exactly $25,000 to the MSSP. Representatives of the MSAP stated that they wanted to be guided in the management of the securities and cash in the reserve fund by the suggestions for buying and selling bonds received from the Board of Trustees through its Finance Committee. Further, that the MSAP held that at the proper time the securities and cash should be returned to the MSSP regardless of any then existing profit or loss thereon.

Upon motion by Dr. Lorenzo, seconded by Dr. Gannon and unanimously carried, the subject was referred to the Finance Committee of the society with the request that they recommend modification of the agreement to meet the situation, same to be referred to the society's legal counselor for advice before May 13.

Item 2 of the Call to the Special Meeting was next considered. Chairman Anderson said that under the Administrative Code, 10 names may be submitted to the Governor for his consideration in the selection of an appointee to fill the vacancy now existing on the Pennsylvania Board of Medical Education and Licensure. At present there is on the board one homeopath from Philadelphia, one from Pittsburgh; one eclectic from Somerset; and one representative of The Medical Society of the State of Pennsylvania from Kingston (Twelfth Councilor District). The vacancy should be filled by a second representative of The Medical Society of the State of Pennsylvania.

No formal action was taken, but Chairman Anderson requested each member of the Board of Trustees, except Dr. Mayock (Twelfth Councilor District), to submit to him the name of a member in his respective district capable, in his judgment, of serving on the board. Such member shall have been in the practice of medicine for at least 10 years and have no connection with any medical school.

Under Item 4 (3) Secretary Donaldson reported progress in the study of the subject of proposed changes in the society's medical defense service, and (2) in the development of a reserve fund and a pension system for the benefit of retired society employees; also another item, namely, the feasibility of an organizational study by a competent business analyst of proposals (3) and (2) and of change in the existing provisions for dual duties as trustee and councilor. Such report is to cover cost and benefits likely to be derived from changes.

After discussion of these points, a motion was made by Dr. Gannon, seconded by Dr. Brennan and unanimously carried, that the 1941 House of Delegates be advised that the Board of Trustees, on account of current and prospective activities and changes arising from national defense preparedness, recommend postponement of the proposed organizational study.

On motion by Dr. Samuel, seconded by Dr. Lorenzo and unanimously carried, the composition of the Executive Committee of the Board of Trustees is to be modified to include a representative of the Publication Committee, the Finance Committee, or the Building Maintenance Committee, if the chairman of any of the named committees is unable to attend any meeting of the Executive Committee, such representative to be selected by the respective committee chairman.

With the unanimous consent of the members of the Board of Trustees, Chairman Anderson asked Dr. Palmer to open discussion on 2 bills now before the Legislature, H. B. No. 462 and H. B. No. 675.

Dr. Palmer stated that No. 462 had apparently been introduced in the interests of 15 so-called schools for the training of nurses, all of them chartered by the courts, but without connection with hospitals and graduating "practical nurses" after their attendance upon a course of lectures. H. B. No. 675 was prepared by the Pennsylvania State Nurses Association.

The latter bill, if enacted, would require all holding themselves out to the public as practicing nurses to be licensed by the state as registered nurses, or licensed attendants (so-called practical nurses). No. 675 also provides the authority for the Nurses' Board to regulate and approve schools of nursing in the state for "licensed attendants" as well as the familiar R.N., the "attendant" to meet requirements set up by the State Nurses' Board in a 9 months' training course spent *in* a school and not merely a course of lectures.

House Bill No. 675 also sets forth the following restrictions: Quoting:

"Section 14. This act confers no authority to practice medicine or surgery nor does it prohibit

"(a) Gratuitous nursing of the sick by friends or members of the family,

"(b) Incidental care of the sick by friends or by domestic servants primarily employed in household duties as long as they do not practice nursing within the meaning of this act.

"(c) Domestic administration of family remedies by any person.

"(d) Nursing services in case of an emergency."

This discussion was followed by a motion by Dr. Mayock, seconded by Dr. Brennan and unanimously carried, instructing Chairman Palmer of the Committee on Public Health Legislation to attend the public hearing on H. B. No. 675 on Apr. 1, and if called upon, to endorse its objectives.

Upon motion duly carried, the special meeting of the Board of Trustees adjourned at 4 p. m.

Respectfully submitted,
Robert L. Anderson, *Chairman,*
Frank A. Lorenzo, *Clerk,*
Walter F. Donaldson, *Secretary.*

Apr. 14, 1941.

COMPENSATION AND OCCUPATIONAL DISEASE LAWS

In the present legislature there promises to be some action concerning the Workmen's Compensation Law. The two undersigned co-operating committees believe that the basic facts in compensation and occupational disease laws as they apply to physicians should be common knowledge among physicians. Therefore, as a joint enterprise, summaries of the present laws have been made and are herewith printed.

In the June issue of this Journal will appear a syllabus for a refresher course in industrial health. The summaries of these two laws will be necessary foundation stones in such a course. Please file them where they will be easily accessible.

Credit for the compilation of these résumés goes to Milton Rose, M.D., professor of public health, Medical School of the University of Pennsylvania, and Charles-Francis Long, M.D., chairman of the Committee on Industrial Health of The Medical Society of the State of Pennsylvania.

(Signed)
Committee on Industrial Health,
Committee on Workmen's Compensation Laws,
The Medical Society of the State of Pennsylvania.

Present Status of Pennsylvania Workmen's Compensation Act

This résumé abstracts the Pennsylvania Workmen's Compensation Act as it now stands. Please note that it is *not* a physician's, not a lawyer's, not an insurance carrier's, not an employer's act; but *it is* a *workmen's* compensation act.

1. What employments are covered?

All employments are covered except those which are casual and not in the regular course of the employer's business, so-called "home work," domestic service, and agriculture.

Although theoretically the act is not compulsory, in industrial practice it is generally considered so.

2. Who is paid?

The worker, in cash.

3. Who pays?

The employer or his insurance carrier or the state fund.

4. How is the cash paid?

No compensation is paid for the first 7 days of disability. After that, compensation is provided for personal injuries by accidents "in the course of employment."

a. Compensation is payable at the rate of 66⅔ per cent of wages with a maximum of $18 per week and a minimum of $9 per week, or full wages if such wages are less than $9, with an absolute minimum of $5 per week.

b. Permanent total disability is payable for 500 weeks with a maximum of $7500.

c. Compensation is payable for loss of arm, hand, leg, foot, eye, and fingers for certain specific periods.

d. In case of death by industrial accident, compensation is payable to the widow for a maximum of 300 weeks with payments continuing to dependent children until the age of 16. In addition to compensation, funeral expenses up to $200 are provided.

5. What other benefits does the injured worker receive?

During the first 60 days after disability, the employer must furnish reasonable surgical and medical services, hospital treatment, medicines and supplies, with a maximum cost exclusive of hospital treatment of $150.

If the employee refuses such medical treatment, he forfeits his right to compensation for any injury or aggravation of existing disability which may be attributed to his refusal to accept treatment.

If the employer refuses to furnish medical treatment, the employee may procure such services and collect the cost from his employer.

6. Who chooses the doctor?

The employer *only* has the right to choose the physician through whom services are to be rendered to the injured employee. In *all* instances his permission to treat must be obtained, preferably in writing.

7. Must an employee undergo medical examination?

Yes. The injured employee is required to submit to medical examination upon request of the employer or upon order of the Workmen's Compensation Board, at the expense of the employer.

Refusal to submit to such examination forfeits the employee's right to compensation. The employee may have a physician of his own selection, to be paid by him, participate in any such examination.

8. How are compensation claims settled?

The act provides for settlement of compensation cases by agreement between employer and employee, such agreements being filed with and subject to the approval of the Department of Labor and Industry.

If the employer and employee cannot agree upon the compensation to be paid, provision is made for hearing before a referee assigned by the Workmen's Compensation Board.

Appeals may be made from referees' decisions to the board and from the board to the courts.

9. Does the board guarantee payment of fees charged by attending physicians?

No. Whether incurred by employer or employee, these fees must be collected from the party served.

10. In case of medical dispute, what does the board do?

The board is empowered to appoint its own medical consultants.

11. How are these consultants paid?

When the board appoints consulting physicians or surgeons in the course of a hearing, compensation for such services is taxed as costs, to be paid out of the Department of Labor and Industry's maintenance fund, the department being reimbursed by either employer or employee or both, as may be ordered by the Workmen's Compensation Board.

12. How may the employer insure himself against compensation risks?

The employer is required to insure with the State Workmen's Insurance Fund or any authorized private insurance carrier unless he applies for and is granted the privilege of self-insurance by the Department of Labor and Industry.

Pennsylvania Occupational Disease Act of 1939

1. What diseases are covered by this act?

Compensable Diseases:

- a. Poisoning by arsenic, lead, mercury, manganese.
- b. Poisoning by phosphorus.
- c. Poisoning by methanol and carbon disulfide, hydrocarbon distillates (including naphtha), and halogenated hydrocarbons.
- d. Poisoning by benzol or its derivatives.
- e. Caisson's disease.
- f. Disability due to radium or x-ray exposure.
- g. Poisoning by chromic acid and chromates.
- h. Epithelioma or skin ulcer due to tar, pitch, bitumen, mineral oil, or paraffin.
- i. Infection or inflammation of skin due to oils, cutting compounds, lubricants, dusts, liquids, fumes, gases, or vapors.
- j. Anthrax.
- k. Silicosis or anthracosilicosis.
- l. Asbestosis.

2. What benefits are provided?

Benefits are similar to those of the Workmen's Compensation Act (q. v.), with certain exceptions.

3. What are the exceptions?

Compensation for silicosis, anthracosilicosis, and asbestosis is payable only for death or permanent total disability, with the maximum amount being $3600.

In cases where occupational disease develops to the point of disablement only after an exposure of 5 or more years, compensation is payable jointly by the Commonwealth of Pennsylvania and the employer.

If disability occurs during the first 2-year period after the effective date of the act, the employer's share of compensation is 50 per cent, this percentage increasing by 10 per cent for each additional 2-year period. The employer under whom the employee was last exposed to the hazards of the occupational disease shall be liable for compensation.

4. Who decides disputed medical cases?

Provision is made for the formation of a medical board selected from a list of 10 physicians furnished by the deans of all legally recognized medical schools in Pennsylvania. Of the 10 names furnished, 3 must be roentgenologists and 3 pathologists. From this list a board of 3 is selected, one roentgenologist and one pathologist. Members of the board receive a fee of $100 per case plus necessary traveling expenses. This board's duties are to hear and determine controverted medical issues in disputed claims.

In addition to the usual medical examination, the employee must submit to such clinical, pathologic, and roentgenologic examinations as may be required by the medical board. In death cases, the medical board may order an autopsy.

5. Is there any further appeal from the findings of the medical board?

The findings of the medical board are conclusive, subject to review by the courts on the question of sufficiency of evidence.

1941 SECTION ON MEDICINE

The Medical Section of the 1941 Scientific Program Committee has decided this year that instead of a number of unrelated papers, which are of varying interest to the general practitioner, each day at Pittsburgh will be devoted to a symposium on one subject.

Tuesday will be devoted to endocrinology. Dr. Max A. Goldzieher, of New York, will be the guest speaker for the day. Dr. Goldzieher is a very forceful speaker who presents his subject in a very interesting manner. There will be 6 other papers on various endocrine subjects embracing the latest developments in glandular therapy, diagnosis of the various endocrine disorders, tests to prove diagnosis, prognosis, and general management of the various endocrine conditions. This program should be very instructive and interesting to all physicians, particularly the general practitioner.

Wednesday will be devoted to the heart. This symposium will be put on by the Pennsylvania

Heart Association and will consist of papers by the best cardiologists in the state. They will embrace the various heart disorders, clinical management of heart conditions from early youth to old age, the latest advances in electrocardiographic diagnosis, and prognosis of the various heart conditions. This symposium should be of general interest to all who attend the convention.

Thursday will be devoted to gastro-intestinal diseases. The guest speaker will be a man of national reputation and the program will consist of 7 or 8 papers covering the various phases of gastro-intestinal disorders, liver function, liver damage, and management of liver disorders. Various stomach and intestinal conditions will be discussed, particularly the diagnosis, prognosis, and management of these disorders. This will be a symposium that should have great practical appeal to all members of the society.

1941 SECTION ON PEDIATRICS

The meetings of the Section on Pediatrics have been divided into two sessions this year and the officers have endeavored in this program to select subjects that will be of value to all physicians interested in the care of children.

Two outstanding guest speakers will be present and their subjects are both timely and interesting. Dr. Samuel W. Clausen, of Rochester, N. Y., will discuss "Vitamin and Mineral Deficiencies," and Dr. Joseph A. Johnston, of Detroit, Mich., will present "The Physical Aspect of the Adolescent Period."

Among the papers to be presented before the section are two on modern therapeutics of two conditions met in everyday practice. Dr. Horst A. Agerty, of Merion, will present a paper on "Sulfathiazole Therapy in the Pneumonias of Infancy and Childhood, with Special Attention to the Blood Picture and a Comparison with the Therapeutic Effect of Sulfapyridine," and Dr. D. Stewart Polk, of Rosemont, will discuss "Treatment of the Epileptic Child, with Particular Attention to the Use of Dilantin."

Two other very practical papers to be presented are "Feeding the Sick Child" by Dr. Elizabeth Kirk Rose, of Philadelphia, and "Treating the Colicky Infant" by Dr. John M. Higgins, of Sayre.

In the field of allergy Dr. Mitchell I. Rubin, of Philadelphia, will present a paper on "The Intestinal Manifestations of Milk Allergy in the Newborn Period."

Three very interesting papers dealing with scarlet fever will be presented. Dr. Maud L. Menten, of Pittsburgh, will discuss "Toxin Immunization Against Scarlet Fever"; Dr. J. Hart Toland who will represent the school physicians, will discuss "Scarlet Fever Immunization of School Children"; and Dr. Joseph S. Baird, of Pittsburgh, will discuss "Allergic Reactions with the New Scarlet Fever Antitoxin."

Dr. J. Moore Campbell will represent the State Department of Health and discuss "Limitations in the Control of Communicable Infections."

The question of intestinal parasites will be considered by Dr. Elizabeth P. Maris, of Philadelphia, who will present "The Diagnosis of Giardia Intestinalis Infestation by Means of Intestinal Intubation," the treatment with atabrin, and follow-up studies of 46 cases.

"The Treatment of Acute Otitis Media in Children" will be presented by Dr. James W. Hershberger, of Martinsburg, and a paper dealing with a particular type of blood dyscrasia will be given by Dr. Theodore O. Elterich, of Pittsburgh.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

New (46) and Reinstated (7) Members

Adams County

Raymond M. Hale, Jr.	Arendtsville

Allegheny County

(Reinstated) Cyril F. Lauer, Cresson.

Beaver County

Maurice V. E. Ross	New Brighton
Samuel F. Hammer	Ambridge

Berks County

Fred R. Perfect	Reading

Butler County

(R) Guy A. Brandberg, Butler.

Clarion County

James L. Fitzgerald	Clarion

Crawford County

Samuel Gottlieb	Meadville
William Kenneth Fisher	"

Delaware County

H. Craig Bell	Rutledge
Curtis F. Henning	Aldan

Indiana County

Norman G. Golomb	Ernest

Juniata County

John W. Greenwood	East Waterford

Jefferson County

William H. Bell	Brookville
Robert M. Jacobson	Punxsutawney

Lackawanna County

Edmund J. Biancarelli	Scranton

(R) Eugene R. Simpson, Peckville; David E. Lewis, Chinchilla.

Lancaster County

Robert U. Wissler	Ephrata

Lebanon County

James Thos. Gallagher	Palmyra

Lehigh County

Dill J. Albright	Orefield
Harold E. Everett	Northampton
Henry I. Klopp	Allentown
Maurice Parmet	"
Frederick M. J. Walp	Slatington

Luzerne County

Homer B. Wilcox	Kingston

Lycoming County

Alex. M. Duff, Jr.	Baltimore, Md.

Montgomery County

Francis J. Bonner	Ardmore
George M. Longaker, Jr.	Pottstown
Saul Steinberg	Norristown

Montour County

Otis M. Eves	Washingtonville

Northumberland County

Walter E. Kotanchik	Shamokin

Philadelphia County (Philadelphia)

Lloyd T. Barnes
J. Louis Caplan
Anna C. S. Colomb
Richard P. Custer
Herman Epstein
Paul E. Gordon
George W. Knadler
John S. Lockwood
Leonard Woods Parkhurst
Robert Tauber
Raffaele L. Violetti

Schuylkill County

William D. Prescott	Pine Grove

Susquehanna County

(R) Robert B. Mackey	Montrose

Tioga County

Robert A. Cornwall	Blossburg

Venango County

James Homer McClelland Jr.	Polk

(R) George W. Burnett, Oil City.

Washington County

Francis E. Downey	Bentleyville

Westmoreland County

Michael G. Frich	Monessen
John Henry Hugg	Jeannette
Joseph F. Lipinski	New Kensington

(R) Arthur D. Barnhart, Youngwood.

Removals (12), Transfers (4), Resignations (5), Deaths (14)

Allegheny County: *Removals*—John Chornyak from Pittsburgh to Chicago; Kenneth F. Miller from Pittsburgh to Carlisle. *Resignation*—Harold Jubelirer, Los Angeles, Calif. *Deaths*—Thomas Morrow McLenahan, Pittsburgh (Coll. of Phys. & Surg., Balt., '93), Mar. 7, aged 74; Meyer B. Lichtenstein, Pittsburgh (Univ. Pgh. '10), Mar. 11, aged 57.

Beaver County: *Transfer*—Clarence L. MacMillen, Baden, from York County Society.

Bedford County: *Death*—Abram M. Miller, Hyndman (Balt. Med. Coll. '05), Mar. 4, aged 71.

Bradford County: *Removal*—Joseph B. Cady from Sayre to Lebanon.

Centre County: *Removal*—Robert A. Houston from Boston to Harrisburg.

Clinton County: *Death*—George D. Green, Lock Haven (Univ. Pa. '99), Oct. 15, 1940, aged 68.

Columbia County: *Transfer*—James P. Sands, Bloomsburg, from Philadelphia County Society.

Dauphin County: *Resignations*—Arthur Baptisti, Jr., Hagerstown, Md.; Bernard A. Sage, Harrisburg. *Removal*—Lee Weinstein from Harrisburg to St. Louis, Mo. *Deaths*—William Lee Clark, Harrisburg (Johns Hopkins Univ. '23), Feb. 28, aged 45; Emerson E. Darlington, New Bloomfield (Maryland Med. Coll. '00), Mar. 16, aged 67; John Oenslager, Jr., Harrisburg (Univ. Pa. '94), Jan. 28, aged 73.

Fayette County: *Death*—Edgar A. McCombs, Connellsville (Univ. Louisville '07), Dec. 17, 1940, aged 59.

Greene County: *Removal*—Ernest D. Brock from Waynesburg to El Paso, Texas.

Lancaster County: *Removal*—Lloyd F. Smith from Lancaster to Fullerton, Calif. *Death*—LeRoy K. Leslie, Bareville (Jeff. Med. Coll. '89), Feb. 26, aged 79.

Mercer County: *Removals*—George O. Hartman from Sharon and Irvin E. Rosenberg, Farrell, to Tucson, Ariz.

Montgomery County: *Removals*—Frederick M. Cornelius from Souderton to Reading; Richard D. Nies from Boston to Narberth.

Philadelphia County: *Resignations*—William W. Bolton, Wilmette, Ill.; Howard Canning Taylor, New York City. *Deaths*—Edward L. Clemens, Philadelphia (Univ. Pa. '15), Mar. 1, aged 55; Elizabeth A. Ryder, Devon (Woman's Med. Coll., Phila., '91), Mar. 14; Robley D. Snively, Philadelphia (Med.-Chi. Coll. '95), Mar. 15, aged 69.

Schuylkill County: *Resignation*—Daniel J. Preston, Wilmington, Del.

Somerset County: *Removal*—Francis Schramm from Somerset to Williamsport. *Death*—Bruce Lichty, Meyersdale (Univ. Pa. '92), Mar. 8, aged 75.

Tioga County: *Resignation*—Philip J. Reilly, Elmira, N. Y.

Venango County: *Transfer*—Gale H. Walker, Polk, from Clarion County Society. *Death*—Thomas A. Irwin, Franklin (Chicago Homeo. Med. Coll. '88), Dec. 5, 1940, aged 79.

Westmoreland County: *Transfer*—John F. Maurer, Greensburg, from Somerset County Society.

Wyoming County: *Resignation*—Leslie J. Boone, Philadelphia.

York County: *Death*—Charles C. Neff, York (Univ. Pa. '99), Mar. 4, aged 69.

Net gain in membership during March 32

PAYMENT OF PER-CAPITA ASSESSMENT

The following payment of per-capita assessment has been received since Feb. 27. Figures in first column indicate county society numbers; second column, State Society numbers:

Mar. 1	Chester	56–83	4742–4769	$280.00
3	Armstrong	39–43	4770–4774	50.00
	York	111–118	4775–4782	80.00
	Clarion	22	4783	10.00
	Venango	16–20	4784–4788	50.00
	Montgomery	207–214	4789–4796	80.00
	Beaver	1–62	4797–4858	620.00
	Beaver	*46, 47		
	Indiana	41–43	4859–4861	30.00
	Lebanon	4–42	4862–4900	390.00
	Lackawanna	89–131	4901–4943	430.00
	Schuylkill	1–70	4944–5013	700.00
	Tioga	12–16	5014–5018	50.00
5	Montour	21–25	5019–5023	50.00
6	Clarion	23–24	5024–5025	20.00
	Cumberland	19–22	5026–5029	40.00
	Perry	1–11	5030–5040	110.00
	Susquehanna	1–14	5041–5054	140.00
7	Lancaster	141–148	5055–5062	80.00
	Philadelphia	1215–1531	5063–5379	3170.00
10	Juniata	8	5380	10.00
	Columbia	38–39	5381–5382	20.00
	Chester	84–88	5383–5387	50.00
	Chester	†89, 90, 91		
	Luzerne	166–231	5388–5453	660.00
	Warren	1–47	5454–5500	470.00
	Venango	21–27	5501–5507	70.00
	Erie	93–113	5508–5528	210.00
	Montgomery	215–224	5529–5538	100.00
	Montgomery	†225		
	Indiana	44–45	5539–5540	20.00
	Northumberland	33–49	5541–5557	170.00
12	McKean	11–21	5558–5568	110.00
13	Somerset	30–33	5569–5572	40.00
	Blair	78–86	5573–5581	90.00
	Erie	114–122	5582–5590	90.00
	Clearfield	42	5591	10.00
	York	119–131	5592–5603	120.00
	York	†123		
14	Clearfield	17–41	5604–5628	250.00
	Elk	18–20, 22–24	5629–5634	60.00
	Franklin	55–65	5635–5645	110.00
	Bedford	5–9	5646–5650	50.00
	Venango	28–33	5651–5656	60.00
	Armstrong	44	5657	10.00
15	Huntingdon	2–5, 8–17	5658–5671	140.00
	Somerset	29	5672	10.00
	Indiana	46–50	5673–5677	50.00
	Lycoming	51–97	5678–5712	350.00
Mar. 15	Lycoming	†51, 55, 80, 92–97, 25, 27, 30		
	Mercer	1–79	5713–5791	$790.00
	Mercer	†80–81		
17	Fayette	53–94	5792–5833	420.00
	Lycoming	98	5834	10.00
	Adams	1–23	5835–5857	230.00
	Carbon	24–30	5858–5864	70.00
	Carbon	†31		
	Mifflin	19–28	5865–5874	100.00
	Susquehanna	15	5875	10.00
	Mercer	82	5876	10.00
	Somerset	6, 34–35	5877–5879	30.00
	Lackawanna	132–155	5880–5903	240.00
	Lackawanna (1940)	268	9200	10.00
	Perry	12–15	5904–5907	40.00
	Washington	69–112	5908–5951	440.00
18	Cambria	75–138	5952–6015	640.00
	Delaware	45, 191–214	6016–6039	240.00
	Delaware	†195		
	Lancaster	149–160	6040–6051	120.00
	Montour	26–28	6052–6054	30.00
	Montgomery	226–227	6055–6056	20.00
	Lawrence	42–56	6057–6071	150.00
	Huntingdon	18–19	6072–6073	20.00
	Clinton	15	6074	10.00
	Jefferson	1–6, 8–31	6075–6104	300.00
	Wayne-Pike	19	6105	10.00
	Bradford	22–31	6106–6115	100.00
	Lebanon	43–46	6116–6119	40.00
	Berks	165–186	6120–6141	220.00
	York	132–133	6142–6143	20.00
	Butler	36–37	6144–6145	20.00
	Erie	123–126, 128–132	6146–6154	90.00
19	Bucks	56–62	6155–6161	70.00
	Lycoming	99–107	6162–6170	90.00
	Venango	34–35	6171–6172	20.00
	Beaver	63–85	6173–6195	230.00
	Luzerne (1940)	352	9201	10.00
	Luzerne	232–248	6196–6212	170.00
	Columbia	40	6213	10.00
	Cumberland	23–28	6214–6219	60.00
	Butler	38–55	6220–6237	180.00
21	Potter	11	6238	10.00
	Northumberland	50–63	6239–6252	140.00
25	Lackawanna (1940)	269	9202	10.00
	Lackawanna	156–175	6253–6272	200.00
	Columbia	41–42	6273–6274	20.00
	Potter	12	6275	10.00
	McKean	22–36	6276–6290	150.00
26	Venango	36–41	6291–6296	60.00
	Schuylkill	71–100	6297–6326	300.00
	Centre	27–29	6327–6329	30.00
	Centre	†30		
	Franklin	66	6330	10.00
	Tioga	17–19	6331–6333	30.00
	Tioga	†20–24		
27	Northumberland	64–67	6334–6337	40.00
	Cumberland	32–33	6338–6339	20.00
	Cumberland	†29–31		
	Washington	113–124	6340–6351	120.00
	Crawford	25, 50–52	6352–6355	40.00
	Lebanon	47–50	6356–6359	40.00
	Montgomery	228–244	6360–6376	170.00
	Crawford	1–24, 26–39	6377–6414	380.00
28	Huntingdon	20–22	6415–6417	30.00
	Somerset	36–37	6418–6419	20.00
	Adams	24–27	6420–6423	40.00

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* Exempt on account of military services; dues paid by county society.

† Exempt on account of military service.

Mar. 28	Erie	133–145	6424–6436	$130.00
31	Venango	42–46	6437–6441	50.00
	Carbon	32–34	6442–6444	30.00
	Greene	3, 21–22	6445–6447	30.00
	Crawford	9, 11, 13–17, 21–22, 53–59	6448–6463	160.00
	Lawrence	57–69	6464–6476	130.00
	Schuylkill	101–119	6477–6495	190.00
	Huntingdon	25	6496	10.00
	Clearfield	43–54	6497–6508	120.00
	Monroe	26–29	6509–6512	40.00
	Monroe	†30, 31, 32		
	Wayne-Pike	20–21	6513–6514	20.00
	Elk	25–28	6515–6518	40.00
	Montour	29–32	6519–6522	40.00
	Susquehanna	16	6523	10.00
	Perry	16	6524	10.00
Mar. 31	Cambria	139–165	6525–6551	$270.00
	Cambria	†166–168		
	Lancaster	161–190	6552–6581	300.00
	Delaware	215–239	6582–6606	250.00
	Northampton	105–140	6607–6645	390.00
	Northampton	*141–143		
	Lackawanna	176–208	6646–6678	330.00
	Lycoming	108–112	6679–6683	50.00
	Armstrong	45	6684	10.00
	Mifflin	29	6685	10.00
	Franklin	67	6686	10.00
	Huntingdon	23–24	6687–6688	20.00
	York	134–157	6689–6712	240.00
	York	†158		
	Blair	87–100	6713–6726	140.00
	Luzerne	249–290, 292–300	6727–6777	510.00

1941 POSTGRADUATE INSTITUTE FOR NEGRO PHYSICIANS

Following the very successful Postgraduate Institute for Negro Physicians inaugurated in Pittsburgh last year, Pennsylvania's second annual similar institute was held this year on Apr. 27, 28, 29, 30, at the Philadelphia General Hospital in Philadelphia. The subjects of Tuberculosis, Syphilis, Child Health, and Maternal Welfare, were covered by outstanding speakers in an intensive way.

Composing the Steering Committee for the 1941 institute were the following members of The Medical Society of the State of Pennsylvania: Drs. W. Roderick Brown, Chairman, Charles H. Carroll, Albert P. Knott, J. Shepard Smith, Pittsburgh; Henry M. Minton, Co-chairman, Frederick D. Stubbs, Arthur H. Thomas, Frederick W. Fortune, Chauncey Harllee, Thomas W. Georges, John P. Turner, Robert W. Henry, Philadelphia; Matthew R. Hadley, William W. Gittens, McKeesport; Clyde H. Anthony, Aliquippa; Whittier C. Atkinson, Coatesville; Lancess McKnight, Media; Harold E. Farmer, Wayne; Moses Clayborne, Johnstown; George W. Bowles, York; A. Leslie Marshall, Cornelius L. Carter, Leonard Z. Johnson, Charles H. Crampton, Harrisburg; John V. Sterrett, Lancaster; and ex-officio, C. Howard Marcy, Pittsburgh, Chairman of the Committee on Tuberculosis of The Medical Society of the State of Pennsylvania. Our State Society sponsored the institutes of 1940 and 1941.

SCHOLARSHIP OFFERED AT THE TRUDEAU SCHOOL OF TUBERCULOSIS

Opportunity for postgraduate study at the Trudeau School of Tuberculosis at Saranac Lake, N. Y., will be available through a scholarship in the amount of $300 offered again this year by the Pennsylvania Tuberculosis Society. The scholarship is offered in co-operation with the Trudeau School, which will contribute $100 of the total amount of the scholarship.

The session this year will open on Sept. 8 and continue 4 weeks. As usual, there will be a supplementary 2 weeks of study at the Bellevue Hospital in New York City. The amount of the scholarship is sufficient to cover the fee for the course and living costs at Saranac Lake and in New York City.

It is especially desired that this scholarship shall go to a physician in private practice in a rural or small town community who has not had special training or experience in tuberculosis.

The course at the Trudeau School is considered to be one of the best opportunities in this country for postgraduate study in tuberculosis in all of its aspects, including roentgen-ray and laboratory methods of diagnosis, prognosis, treatment, and complications, and including also the important complications of silicosis. Those taking the course are given full advantage of all of the extraordinary facilities at Saranac Lake and the Bellevue Hospital. The staff of instructors is composed of outstanding specialists. As only a limited number of physicians is admitted to the course, there is opportunity for close personal relations and intimate and detailed discussion.

A committee of competent tuberculosis specialists will evaluate applications and make the award of the scholarship.

Requests for further information and application forms should be directed without delay to the Pennsylvania Tuberculosis Society, 311 South Juniper Street, Philadelphia, Pa.

PUSSY GETS PELLAGRA

Pussy, or her brother Tom, can get pellagra from a poor diet just like the rest of the family. Nicotinic acid, the cure and preventive of the ailment for humans and dogs, will also cure or prevent the disease in cats.

Discovery that cats require this B vitamin, nicotinic acid, for health is announced by Drs. M. K. Heath, J. W. MacQueen, and Tom D. Spies, of the University of Cincinnati, the University of Alabama, and Hillman Hospital, Birmingham, Ala. (*Science*, Nov. 28).

Cats' need for this vitamin and pellagra in cats have apparently never before been reported, although scientists have found that pigs and monkeys, as well as dogs and humans, need the vitamin.—*Science News Letter*, Dec. 7, 1940.

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* Exempt on account of military services; dues paid by county society.

† Exempt on account of military service.

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COUNTY SOCIETY REPORTS

BRADFORD

Mar. 11, 1941

The regular monthly meeting was held at the Ward Hotel, Towanda, at 8:30 p.m. The president, J. K. Williams Wood, presided.

The guest speaker, Francis T. O'Donnell, of Wilkes-Barre, chairman of the State Medical Society's Child Health Committee, presented a paper entitled "Malnutrition in Childhood." This presentation was very complete and covered such points as infant feeding in the normal as well as the organically ill child. The proper psychologic approach in the handling of so-called difficult cases if free from organic pathology was emphasized, more notably the effect of overwork, too much play, and the lack of proper rest on the appetite of the otherwise normal youngster. Dr. O'Donnell stated that the real beginning of the proper management of the child as respects nutrition and future welfare should date from the early months of pregnancy in the mother. He included in this paper also the generally accepted plan of management of the infant's first year of life in order to promote the general well-being of the child. This included smallpox vaccination at the age of 3 months, pertussis immunization at 4 to 6 months, and the administration of diphtheria toxoid at 9 months. Concerning the latter, Dr. O'Donnell feels that one injection of diphtheria toxoid is, in the majority of cases, inadequate and suggests 2 doses at intervals of a month, to be followed by a Schick test in approximately 60 days to determine the degree of immunization. Finally, he made a plea that the physicians of Bradford County co-operate with the district chairman of the Child Welfare Committee in furthering this important work. Discussion was opened by John M. Higgins, of Sayre.

Dominic S. Motsay, *Reporter.*

BEAVER

Mar. 13, 1941

The society held its regular meeting in the Assembly Room of the Court House, Rochester, at 3:30 p.m.

A complete report was made by the Committee on Pneumonia Control, which has much to be proud of.

The scientific program was in charge of the Committee on Maternal Welfare, Everett H. Laird, chairman. Glenn C. Camp and John H. Trumpeter read reports of interesting obstetric cases.

John H. Gemmell, *Reporter.*

BERKS

Dec. 10, 1940

The regular monthly meeting was held at Medical Hall, Reading. Charles E. Lerch, president of the society, was in charge and introduced the guest speaker, Samuel A. Cosgrove of the Margaret Hague Maternity Hospital, Jersey City, N. J. The topic for the afternoon was "Management of Prolonged Labor." Dr. Cosgrove said in part:

The number of spontaneous deliveries increases with the increase in duration of the time of labor. While the elements of dystocia and form of interference vary, inadequacy of uterine power is one of the most frequent in occurrence. Cervical dystocia is one of the least frequent. An important cause, however, is rigidity of the pelvic floor through dimensional disproportion. The measurements directly concern the bony structure of the entire pelvis, but the methods of fetometry are very inexact. The physical findings are more important than the x-ray report if they are not used in conjunction with each other. Artificial interference must be attempted only after careful observation of the patient during active labor. Artificial means of delivery in vertex presentation are low forceps, mid forceps, manual rotation, and craniotomy; in spontaneous breech or breech extraction there are version, lower segment section, extraperitoneal section, and cesarean section.

The prolongation of labor bears no relation to the weight of the baby. About 74.6 per cent of primigravidae and 25.4 per cent of multigravidae present some difficulty which lengthens the time of labor. Most patients in labor are delivered within the normal time with no or with minor interference. Those conditions always requiring interference are placenta previa, premature separation, ruptured uterus, and toxemia.

The management of any case of labor requires (1) prophylactic attention with careful prognosis, and (2) strict prenatal regimen.

In prolonged labor, the patient must be protected (1) against infection, (2) against exhaustion, and (3) against hemorrhagic risk by prenatal blood typing and listing of proper donors.

Pituitrin or other similar products are almost never to be used before the end of the second stage.

Manual or instrumental dilatation of the cervix has no legitimate place in obstetrics.

If cesarean section is to be performed, it should be done within 24 hours of the onset of labor, and within 6 to 8 hours of rupture of the membranes.

During the discussion Drs. Muhlenberg, Lawrence, and Cosgrove each contributed pertinent observations.

Feb. 11, 1941

The regular monthly meeting was held at Medical Hall, Reading. Chester K. Kistler, president of the society, was in charge and introduced the guest speaker, Francis Clark Grant, professor of neurosurgery at the University of Pennsylvania. The topic for the afternoon was "Management of Cranial Trauma." Dr. Grant said in part:

The number of head injuries incurred in automobile accidents is much greater than those caused by falls and other forms of violence. Each one presents an individual problem. Head injuries are not necessarily fractures of the skull. The most important factor to consider is to what degree the brain itself is injured, not the bone covering it. There are two things a physician can do for a patient with a head injury: (1) prevent meningitis (infection), and (2) relieve intracranial pressure. That is all that should be done. The possibilities of repairing a lacerated or contused brain are nil. Nothing can be done to the brain directly.

Immediate surgical intervention is indicated in lacerations, compound fractures, certain depressed fractures, and when there is evidence of a brain lesion not only localized but progressive, such as hemorrhage. Intervention is indicated primarily to prevent infection of the wound. The deeper the wound has penetrated, the greater the danger of the onset of meningitis.

In cases where there is simple laceration of the scalp, it is necessary to drain all except those made with a clean knife or other similar object. If there is contusion, fatty degeneration and exudate may be expected. Débridement followed by draining is necessary.

In compound fractures, the factors to be considered are the amount of dead crushed tissue and skin, the amount and extent of the fracture line, the penetration of dura, and the time elapsed before the patient is seen by a physician.

For all head injuries the hair should be shaved and the wound flushed with a mild antiseptic. Then an aseptic glove should be worn, and the depth of the fracture explored in order to determine whether it is depressed or comminuted, and whether any cerebrospinal fluid is escaping. Radical cleaning and removal of bone fragments is essential. All potential elements of infection must be removed. It is better to have a live patient with a dent in the head than a dead one with a good skull contour. Sulfanilamide and sulfathiazole should be administered as preventives in urgent surgical cases.

Contusion of the brain is more common. If it occurs simultaneously with the injury, a weakness or static paralysis occurs, which does not change or increase. In such a case the patient should not be operated upon. Nothing can be done to the brain directly. Sedatives and fluids should be given; a lumbar puncture should be done in medicolegal cases to allow for evidence as to whether there was or was not blood in the fluid. Dehydration is not necessary; if the kidneys are in good shape, between 1500 and 2000 c.c. of fluid every 24 hours should be given.

Sedation is important; it should be done with drugs, not with shackles. For physiologic reasons, morphine and codeine should not be used; other sedatives are preferred. Sitting up in the semi-Fowler position is allowed, unless the patient has mucus, in which case the head is put down and the feet up in order to let the mucus run out. Two weeks in bed are essential. If activity causes headache, activity should be decreased. A rise in temperature presages trouble; or, if the temperature remains very low, there is trouble ahead. No surgical procedure should be instituted unless the physician knows definitely what he is doing, why, and what results are wanted.

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Harrisburg, Pennsylvania

Mar. 11, 1941

The regular monthly meeting was held at Medical Hall, Reading. Chester K. Kistler, president of the society, was in charge and introduced the guest speaker, Edward A. Strecker, professor of psychiatry at the University of Pennsylvania. The topic for the afternoon was "Alcoholism." Dr. Strecker said in part:

The consumption of alcohol is on the increase. The difference between social drinking and pathologic drinking must be appreciated.

Since there is no certain proof of definite pathology due to alcohol per se, chronic alcoholism is probably not an organic disease. Many psychoses are induced by alcoholism, but these represent only a very small part of the whole problem.

Because alcohol is usually used to evade reality, just as a psychoneurotic uses his favorite set of symptoms, the introvert has almost a psychologic need for alcohol because it produces magic and fantasy. But alcohol has a regressive effect, inhibiting and blunting the realities of life. The psychoneurotic indulges in rationalization, commonly called wishful thinking. As the consumption of alcohol becomes more chronic, the drinking goes out of control, until the sole aim of drink is for anesthesia. After this stage has passed, the drinking is nonreasoning and automatic like the acts done following hypnosis.

The majority of drinkers are social drinkers. They are extroverts and find pleasure in crowds. Drinking, because it peps up the group, is secondary. Pathologic drinkers are recruited from the ranks of the social drinkers.

The pathologic drinker begins to drink, not to make life more pleasant but rather to escape from something unpleasant. Passing from one stage to the other occurs when there is (1) a dangerous increase in quantity, and (2) when the behavior rapidly and definitely changes.

Usually the original cause of chronic alcoholism is emotional immaturity during childhood. Mental treatment is necessary; alcoholism is not cured by medicine alone. The psychologic re-educational treatment of alcoholism aims to secure emotional maturity.

Alcoholic addicts frequently show evidence of having been treated as children, even in adult life, and not trusted. They must be taught to make up their own minds and solve their own problems. Usually, it is advisable to produce a condition reflex; it is better to consider the lurid past and worry about it than to forget it as negligible.

It is best not to permit the patient to try recovery for sob reasons such as sympathy for relatives and friends. He must make up his own mind to live a nonalcoholic future. This fixation of a nonalcoholic future must be emphatic. A daily schedule for the next day's routine is excellent. As each item is completed, it should be checked. All deviations from grace should be noted. Psychologic re-education plus vitamin therapy is most effectual.

PEARL E. HACKMAN, *Reporter.*

BLAIR

Mar. 25, 1941

The regular monthly meeting was held in Altoona. The speaker of the evening was John C. Howell, of Philadelphia, who spoke on "Diagnosis of Breast Tumors."

Dr. Howell stated that the laity has, in a sense, become cancer-conscious and that their cognizance of the problem is a challenge which the profession has to meet. Many patients are coming to the surgeons entirely too late for them to be permanently benefited. In order to recognize cancer early, we must be able to recognize conditions which make it most likely to develop. This involves or demands a knowledge of the fundamental physiologic and pathologic principles concerned.

Using slides to illustrate the changes taking place in the lymphatic filaments in the earliest stages of cancer development, the basic and underlying pathologic principles were demonstrated, and the 5 methods of metastasis discussed. The bearing which chronic mastitis has on the development of this lymphatic derangement in the breast was explained and the importance of age as a factor evaluated.

A detailed history is essential, and a thorough examination of both breasts was especially stressed. In the past much more importance was attached to the type of discharge oftentimes coming from the nipples. Over a period of time it has been learned that this is not a dependable criterion.

Various aids in diagnosis such as transillumination, x-ray examination with thorium dioxide, and punch biopsy are considered to be of questionable value and in many instances are harmful to the patient. Recent use of a pathoscope by R. Philip Custer has aided greatly in rapid diagnosis at the operating table. No fixation or alteration of tissue need be made by this method.

Following Dr. Howell's presentation, much discussion took place concerning the value of preoperative and postoperative roentgen ray. It was also mentioned that there is considerable importance in the practice of instructing patients to form the habit of examining their breasts from time to time for the appearance of lumps and having them report to their physicians.

R. MARVEL KEAGY, *Reporter.*

CHESTER

Mar. 18, 1941

At the regular meeting held at Pennhurst, Irving M. Waggoner talked on "Hypertensive Heart Disease." The subject was covered in a concise and thorough

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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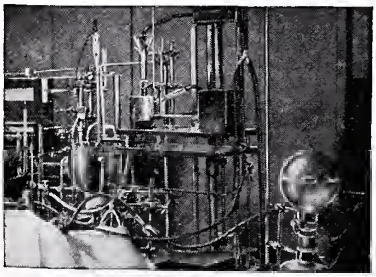

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way with emphasis on known facts, and theorizations minimized. The following is a summary:

The *incidence* of this disease is high and apparently increasing. Hypertension is a factor in 30 per cent of deaths from heart disease; 95 per cent of hypertension is essential.

The *etiology* of hypertension is still unknown. It occurs in both sexes, but is better tolerated by the female; it has a hereditary tendency; and it is likely to follow long-continued nervous and physical strain. It has been learned through animal experiments that anything producing ischemia to renal tissue causes hypertension. The assumption is that there is a chemical substance formed in an ischemic kidney which stimulates the muscles of the small blood vessels to contract and thus produce essential hypertension.

The *pathology* consists in narrowing of small blood vessels, dilatation of the aorta, a concentric hypertrophy of myocardium before failure sets in, and the inevitable hypertrophy and dilatation of the left ventricle as failure develops. It is purely a degenerative process and no myocarditis is present.

The *signs* of hypertensive heart disease are definite enough for one to make a diagnosis without a blood pressure reading. Slow rates are the rule. Gallop rhythm and pulsus alternans are the most frequent arrhythmias. The electrocardiogram shows a shift of the cardiac axis with a left predominance. Early there is accentuation of the second heart sound with dilatation of the aorta and ventral ring producing functional murmurs. The heart enlarges as a result of hypertrophy and dilatation. In short obese individuals the great vessels are pushed up causing a pulsation of the innominate artery at the base of the neck which is often mistaken for aneurysm.

The *prognosis* is not good. Sixty to 70 per cent of persons with essential hypertension will develop congestive failure in 10 to 20 years, 20 per cent die of cerebral accidents, and 10 per cent succumb to renal insufficiency. The two main reasons for the congestive failure are the greater load and coronary sclerosis.

The *diagnosis* is made by the rise in blood pressure, the heart signs, congestion at the lung bases, and the edema which is often present before cardiac failure because of increased capillary pressure.

The *treatment*. Rest is of primary importance. This should be both mental and physical. Psychotherapy plays an important part in the management whether or not it is intentional. A mid-day rest with complete relaxation is advisable. *(This does not include reading and knitting.)*

Weight reduction in the obese will lessen the load on the heart and kidneys. Diet is indicated only quantitatively. There is no reason why a hypertensive should not eat meat. Protein is essential to prevent a nutritional edema. Salt and water need not be limited unless edema is present. The bowels should be kept freely open to avoid straining.

Of the drugs, the most important are the sedatives in small dosage. The vasodilators offer relief, but no cure. Erythrol tetranitrate has the most prolonged action of the nitrites. The xanthines are valuable as vasodilators and diuretics. Thiocyanates have been used successfully, but are likely to be toxic. They should not exceed 6 grains daily. Recently, the mercurial diuretics have added greatly to the comfort of these patients after the onset of congestive failure. Salyrgan with theophylline is as good as any. It should be used intravenously rather than be given intramuscularly where the tissues are already soggy with fluid that can't be picked up.

All the treatment is symptomatic. The physician must

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Kugelmass: **"Newer Nutrition in Pediatric Practice."**
J. B. Lippincott Co., Philadelphia, 1940, p. 334.

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Ariyama & Takahasi, **Biochemische,**
Zeitschrift, vol. 216, p. 269, 1929.

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Marriott: **"Infant Nutrition."**
C. V. Mosby Co., St. Louis, 1930, p. 45.

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Louis S. Bringhurst, *Reporter.*

DAUPHIN

Mar. 4, 1941

Lt. Col. Frank H. Dixon, commanding officer of the Station Hospital, Indiantown Gap Military Reservation, Pennsylvania, addressed the Dauphin County Medical Society on the subject of "Our Military Preparedness Past and Present." Col. Dixon emphasized the fact that the medical profession has never failed to offer its services willingly and freely in time of war or emergency. In the Revolutionary War 1400 men of medicine volunteered. In the Civil War there were 12,000 physicians in the Federal Army and 9000 in the Confederate Army. At the time of the Armistice in World War I there were over 31,000 medical men in regular service as well as many more in the Sanitary Corps. The medical profession may also recall with pride that the Medical Officers Reserve Corps was the first Officers Reserve Corps to be established, the others following suit.

There has been much talk, said the Colonel, about our lack of medical preparedness at this time. Naturally, some of this is from political sources, some from propagandist sources, and some from those who do not wish to serve and wish to appear as martyrs. The facts controvert the argument that medical preparedness is not well advanced. The Medical Corps has ever had before it the knowledge based on true experience that preparedness or the lack of preparedness wins or loses wars. Colonel Dixon cited many examples of this.

That the Medical Corps has not been negligent in applying this lesson is shown by 20 years' preparations for any future emergency. Planning for procurement of supplies began in 1920 and has been actively organized to follow all new developments since. The 50 or more base hospitals which were in 1917-18 organized in clinics, hospitals, and medical schools were made into reserve units following demobilization after the Armistice.

Because time and lack of civilian interest has dissipated most of this personnel in the ensuing years, Major General Reynolds, the Surgeon-General of the Army, proposed to the War Department in 1938 that these units, now designated general hospitals, be reorganized and new units including surgical and evacuation units be established in larger medical centers and clinics of the United States. Authorization for this was given in 1939 and during the spring of 1940 active organization was initiated. *At the present time more than 100 of these units are ready to function if the present "limited emergency" becomes an all-out emergency.*

Colonel Dixon assured the members of our society that every effort is being made to place reserve officers called to active duty in the specialty in which they were trained. At Indiantown Gap the medical personnel was

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In closing, Colonel Dixon asked only that other county medical societies evince the same interest shown by the Dauphin County Medical Society in finding out what is being done in the way of medical preparedness, and then be willing to serve when the opportunity arises. William Tyler Douglass, Jr., *Reporter.*

DELAWARE

Mar. 13, 1941

The monthly meeting was held in Chester Hospital at 9 p. m. The business meeting was called to order by the president, Franklin E. Chamberlin.

The office of district censor, left vacant by the entrance of John B. Klopp into the United States service, is to be filled by Ralph E. Bell on recommendation of the president.

Applications for membership into the society from the following were approved: H. Craig Bell, Rutledge; Curtis Fisher Henning, Aldan.

Carl A. Staub, of the Committee on Public Assistance, appealed to all physicians to acquaint themselves with the conditions set forth in the leaflets of the Department of Public Assistance, so that each may fill out his case slips correctly. A report was made by Dr. Whitney, chairman of the Committee on Public Health Legislation.

Following the business session the meeting was turned over to 5 physicians who conducted a round-table discussion on tuberculosis. Participants were Frank W. Burge, phthisiologist, who acted as chairman; Chevalier L. Jackson, bronchoscopist; Joseph W. Post, roentgenologist; Richard H. Meade, thoracic surgeon; and Esmond R. Long, medical director at Phipps Institute.

Dr. Burge, in opening the discussion, said the object of the meeting was to answer questions asked by the audience. He said that all chronically expectorating patients should have repeated sputum examinations, and that the State Health Department makes ample provision for sputum examinations.

Dr. Burge next stated that if a preschool child is found to have a positive tuberculin test, he received the infection from the immediate family in his own home. A tuberculin test should be given to all members of that family; those who are positive should then have a single plate x-ray study.

There are 2 types of tuberculin tests in common use today: (1) the intracutaneous test made with either old tuberculin or the protein precipitated derivative; and (2) the patch test. The latter test is advisable for preschool children, but for large groups the P.P.D. tuberculin is best.

The patch used for the test is similar to a band-aid dressing. It consists of 3 small patches on an adhesive strip; the 2 end patches have a small amount of tuberculin on them; the central patch has been dipped in the tuberculin bouillon and serves as a control. The best site for the test is the back; the skin is cleansed well with ether and the patch strip is applied. This is left on for 2 days, after which time it is removed by the family; 2 or 3 days later the child is brought to the physician for reading of the test. If the patch test is positive, there will be small areas of erythema beneath the 2 end patches.

Question: In how many instances where the patch test is negative is the tuberculin test also negative?

Dr. Long: If the patch test is put on securely, the difference in the reaction from old tuberculin and P.P.D. tuberculin is very slight. All tuberculin tests are read too high. All persons having clinical tuberculosis are in the positive tuberculin test group. Many persons who early have a positive test can later become negative because of loss of sensitivity to the test. Ideally the tuberculosis infection rate could be cut by putting all positive tuberculin reactors in beds in sanatoria. Healed cases may lose their sensitivity to the test. The dose of tuberculin is often pushed very high in these old cases to obtain a positive reaction.

Dr. Charles Aitken, who is making tuberculin tests throughout Delaware County, has found that small doses of the stronger dilution of P.P.D. have produced bad reactions and sore arms. He wrote to

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Harrisburg asking permission to use the intermediate dose or the patch test. He was told in reply that Dr. Long of Phipps Institute advised that the intermediate dose would be adequate and sufficient. Since then Dr. Aitken has done 150 tuberculin tests in Delaware County with the intermediate dose and has gotten fewer positive reactions than 2 years ago, when he had 30 per cent positive reactions as compared to 9 per cent this year. This may be explained as follows: (1) There is less tuberculosis; (2) some reactions to the stronger doses are not specific.

In discussing the nonspecificity of the reaction to the higher dilutions of tuberculin, Dr. Long said that 2 workers did tests on newborn babies and children of other ages. The tests were made in 10 or 15 different dilutions. The results showed that in the newborns there was an increase in the number of positive reactions up to a certain dilution and above that there were very severe reactions. Some skins are more sensitive than others and therefore false reactions may be obtained. The tuberculin molecule is not very large, is moderately diffusible, and will pass through the epidermis; it could be forced through the skin by the electric current.

Question: What is the possibility of activating tuberculosis by tuberculin?

Dr. Burge: The idea of secondary tuberculosis developing on tubercular soil is ridiculous. The primary tuberculous infection can be destructive.

Dr. Long: This question involves lung pathology. Most tuberculosis is air-borne, the bacilli being carried in droplet nuclei. If a child is infected with tubercle bacilli at age 6 and again at 6½ years, reinfection goes on but does not "take." As body growth occurs and the chest assumes a different shape, if the body is sensitized to tubercle bacilli, the resulting lesion will differ in type from the early lesion. Studies of the primary tuberculous infection in an adult are being made and show that everyone has a different reaction to the tubercle bacillus; no reaction is true to form. Apical lesions, lymph node reactions, etc., are seen.

Question: In the necropsy room cases of diffuse miliary tuberculosis are seen; these are secondary manifestations in the lung with millet seed involvement of organs. Are the miliary lesions not metastatic to the fibrocaseose lesion in the lung?

Dr. Long: All cases of tuberculosis have dissemination, but this is not always visible in the organs. If the organs of a tuberculous patient were studied, lesions of the epithelioid type with giant cells would be found.

Dr. Post then showed the x-ray films of a primary tuberculous infection with cavity formation in an adult. The films were the body section type. Dr. Post, when asked what body section radiology was, said it is just coming into its own in America. It was patented in 1920 by a Frenchman. The working idea of the process is to move the tube above the body and the film below the body while taking the picture. The process fell into disuse until 1929 when a patent was taken by Keifer. It is now used in general x-ray work and in thoracic roentgenology.

Question: Why don't we see more childhood infiltration in cavity cases?

Dr. Burge: The most severe infiltration reactions are seen in the colored race. This severity seems to be due to a racial difference.

Dr. Long: There is more primary infection in negroes and Indians than in the white race. We see less infiltration because the calcified lesions remain but the infiltration stages subside and so are not always apparent on the x-ray films.

Question: How can you differentiate a primary lesion?

Answer: One must follow the case with roentgenologic studies and see the lesion develop.

Question: How should a lung abscess be treated?

Dr. Jackson: A review of about 120 cases over a 10-year period at Temple University Hospital led to the conclusion that when conservative therapeutic measures were used for 3, 4, or 5 weeks, there was no regret for this treatment. However, if conservative measures were continued for a longer period, regret was forthcoming.

The lung abscess case should be kept on a preliminary conservative therapeutic régime of which bronchoscopy should be a part. Some cases are healed by bronchoscopy, but others have to be referred to a thoracic surgeon. Pulmonary abscess cases are brought up weekly at the Temple University Hospital conferences so their progress can be followed and the proper treatment instituted at the proper time. A goodly percentage of lung abscess cases do not need surgery. It is essential to distinguish between the putrid and nonputrid abscesses. All putrid abscesses require drainage.

Dr. Meade: There is more agreement now among internists and surgeons regarding the treatment of lung abscesses. Some abscesses drain themselves successfully. There is always the question of when to do surgical drainage. In one series of cases, it was found that if the lung abscess was surgically drained before it ruptured into a bronchus, better results were obtained than with drainage after rupture. Some physicians believe there should be no surgical drainage until conservative treatment has been given and the abscess has ruptured into a bronchus. Some abscesses have been drained in the first, second, or third weeks with 3 per cent mortality. A comparison was made at Johns Hopkins of cases

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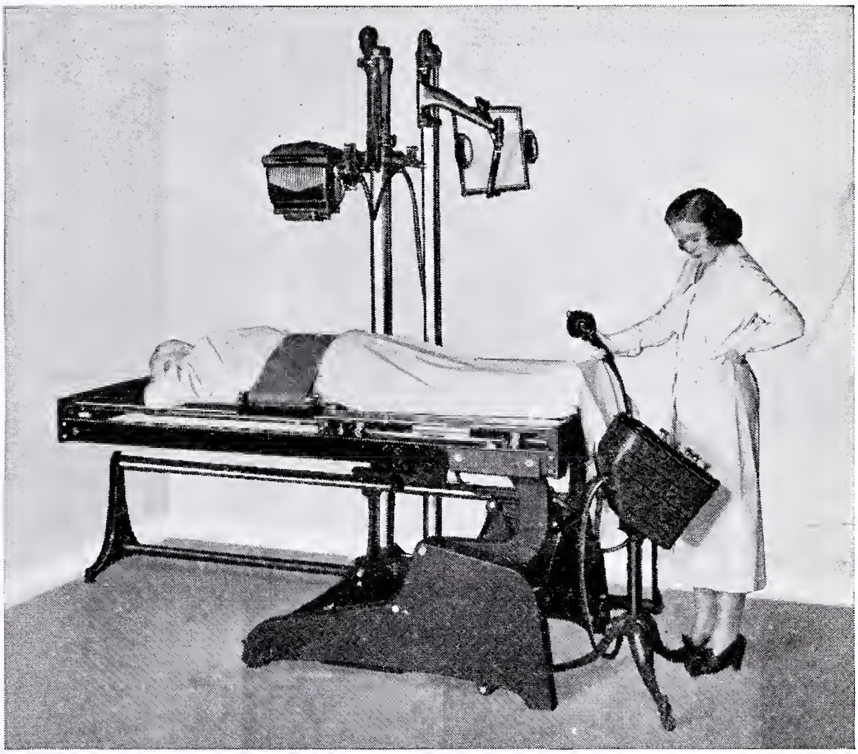

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which were drained during the first, second, or third weeks with those drained after 5 or 6 weeks; better results were obtained in the early drained cases. Surgical abscesses are always peripheral; very exact localization is necessary to drain them successfully. After surgical drainage all patients should continue under the care of the surgeon, the internist, and the bronchoscopist; each has an important part to play.

Question: What is the value of high pressure pneumothorax versus low pressure pneumothorax versus pneumolysis?

Dr. Burge: High pressure pneumothorax is effectual in good hands. It is said by some to be dangerous because it produces infected fluid. Fluid resulting from high pressure pneumothorax is rare. The fluid, if it forms, is due to the introduction of germs from outside the pleural cavity.

Dr. Meade: The surgeons see the bad results of pneumothorax. Pneumothorax therapy under good conditions is ideal. A small percentage of cases have no adhesions and, therefore, get complete collapse. Sometimes the adhesions can be seen by x-ray study.

In other cases, although the adhesions are not divisible, pneumothorax is continued and as a last resort the patient is referred to the surgeon for complete thoracoplasty. If unsuccessful pneumothorax is continued, fluid or empyema results and extensive thoracoplasty must be done.

Question: Is the bronchoscope being used more and more in tuberculosis, especially for diagnosis? What is the value of the bronchoscope in obtaining sputum?

Dr. Jackson: A large series of patients have been examined by the bronchoscope to determine (1) the ratio of lesions, and (2) the risk to patients when bronchoscopy is carefully done. The results of these examinations were that many tuberculous lesions may be thus found; the number varied from 25 to 30 per cent in different series. Ten to 15 per cent of the tuberculous lesions are found in the bronchus or trachea.

Tuberculosis is not a contraindication to bronchoscopy. The examination is serious and should be done carefully in cases of severe ulcerative laryngitis. Bronchoscopy is contraindicated in those cases where the patient is very weak or has severe hemorrhages.

Bronchoscopy has proven that many lesions can be found by this method. Some series of cases showed a spread of the disease (3 or 4 out of several hundred) after bronchoscopic examination, but this spread is not greater than in cases where no bronchoscopic examination is made.

In many cases a positive sputum was obtained by the bronchoscope when expectorated sputum was negative for tubercle bacilli. If an aspirating tube can be introduced into the bronchus from which drainage is issuing, a better concentration of organisms can be obtained.

Dr. Burge: Pneumoperitoneum is used between pneumothorax and thoracoplasty. The advantages of pneumoperitoneum are: (1) Both lungs can be treated at the same time; (2) it is used on senile patients or those who are orthopneic and those on whom thoracoplasty is contraindicated.

Following a rising vote of thanks to the discussants for their very interesting program, the meeting adjourned. Ruth E. Duffy, *Reporter.*

HUNTINGDON

Mar. 13, 1941

A very interesting meeting was held at the J. C. Blair Memorial Hospital, Huntingdon. The meeting was called to order by the president, Frederic H. Steele. Following the regular business session John S. Herkness, chairman of the Pneumonia Control Committee, reported on the pneumonia control meeting held Mar. 11 in Harrisburg. He stated that "Chemotherapy in the treatment of pneumonia is now exceeding that of serum therapy. The mortality rate in the United States has been reduced by 9 per cent, whereas in Pennsylvania it has been reduced 50 per cent. Pennsylvania's pneumonia control program is the outstanding program in the United States."

Dr. Herkness further stated that "the present drug used in pneumonia, namely, sulfathiazole, may be replaced by a more recent and efficacious drug called sulfadiazene."

Walter Orthner presented the scientific paper of the program. His subject was "Cardiac Conditions Simulating Abdominal Disease." He presented case histories of a series of cases. Each case illustrated a type of heart disease which might simulate abdominal disease. He discussed the differential diagnosis and stressed the need for careful examination and study of every case.

All the members present entered into a lively and interesting discussion of Dr. Orthner's presentation.

WALTER B. WATKIN, *Reporter.*

LUZERNE (HAZLETON BRANCH)

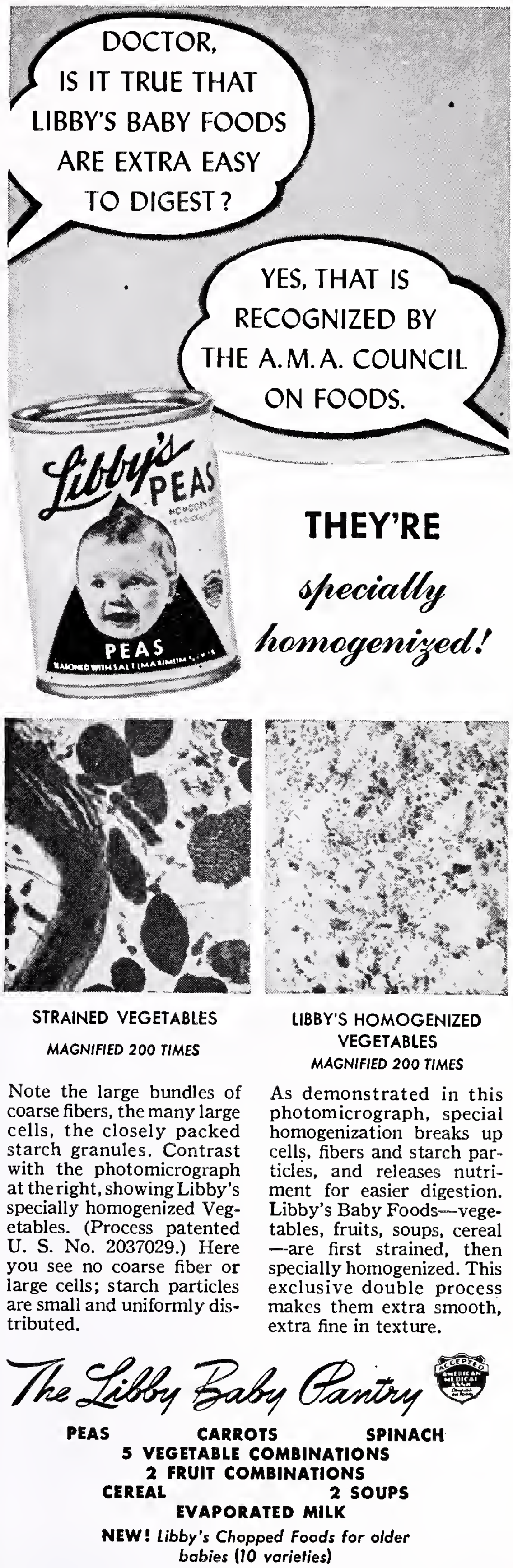
Mar. 12, 1941

A regular meeting was held at the Altamont Hotel, Hazleton, with President Joseph A. Alexis presiding. Following the business session, Jacob G. Hyman, of Wilkes-Barre, gave a very informative talk on "Sterility—Its Causes and Correction." Essentially his discourse was as follows:

The causative factors of human sterility are woven around the spermatazoa, the ovum, and those factors which interfere with their union. Fortunately, all three lend themselves very readily to objective study.

To begin with, an accurate history of the male partner should be elicited with special reference to such childhood diseases as mumps and a possibly associated orchitis; undescended testicle; and such adult diseases as gonorrhea and syphilis; also, the history of any previous marriages and the progeny that may have resulted therefrom should be noted.

The physician's examination aside from being complete should concentrate on any evidence of endocrine disorder and any disease of the genital apparatus. Next, a semen study should be made after 7 to 10 days' abstinence from intercourse. The specimen should be collected in a washed condom, because the powder in an unwashed one has spermicidal tendencies, and should be examined not later than two hours after it has been obtained. The total volume should be about 3 to 5 c.c. and the count not less than 60,000,000 per c.c. Of this number, not more than 20 per cent of abnormal forms should be present, because if there are more one is dealing with an endocrine cause. If many pus cells are found in the specimen, the cause of the sterility is infection. At least 90 per cent must remain active for one hour and at least 10 per cent for 24 hours, provided the wet preparation is sealed with vaseline under a cover glass.



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The above findings do much to indicate the treatment. Finding azoospermia, one should look for evidence of hypothyroidism, Fröhlich's syndrome, cryptorchidism, or generalized obesity, and treat accordingly. Oligospermia when present is treated with biweekly massage of the prostate and seminal vesicles, and the eradication of infection if necrospermia exists.

If the male factor has been eliminated by the foregoing study, the Max Huhner test should be done. The finding of living spermatozoa on the cervix indicates at once that the cervix is in the right position to receive the semen.

In 389 unions 14 cases, or 3.6 per cent, failed to show spermatozoa in the vagina or cervix; that is, in spite of normal semen study. Mazer et al. believe that failure of insemination of the cervix is most frequently caused by a tight, fibrous, hypersensitive vagina and that the Hirst enlargement operation is curative.

If further information is desired, the Rubin test is performed. This should be done several days after the menstrual period and never in the presence of adnexal or cervical infection. Furthermore, it may be mentioned that monthly repetition of the Rubin test under high pressure plus diathermy is the most effective treatment of tubal occlusion.

The causes of functional sterility from an endocrinologic point of view are either primary pituitary, thyroid, or ovarian. Thus in the female the physician can recognize one group with amenorrhea or abnormal uterine bleeding, and another group of women who menstruate regularly but show a defective premenstrual phase or a total absence of premenstrual endometrium.

Treatment consists of the judicious use of prephysin, which is follicle-stimulating; antuitrin-S, which is luteinizing; and the estrogens for ovarian deficiencies. The high protein diet is of value in the pituitary types.

Nathan Sussman, *Reporter.*

LYCOMING

Mar. 14, 1941

The regular monthly meeting was held in Medical Hall, Williamsport Hospital, at 1:45 p. m. The chief topic was "The Assistance Program."

We were highly honored in having a splendid address by Lewis T. Buckman, of Wilkes-Barre, president-elect of The Medical Society of the State of Pennsylvania (see page 971, this issue, Pennsylvania Medical Journal).

Following the presentation by Dr. Buckman, Mr. James Brindle, deputy director of the Department of Public Assistance of the State of Pennsylvania, gave a brilliant talk which was most enlightening. He expressed the desire of the department to co-operate wholeheartedly with the healing arts group. He claims that the medical service program as an issue in the State of Pennsylvania is far superior to that of any other state.

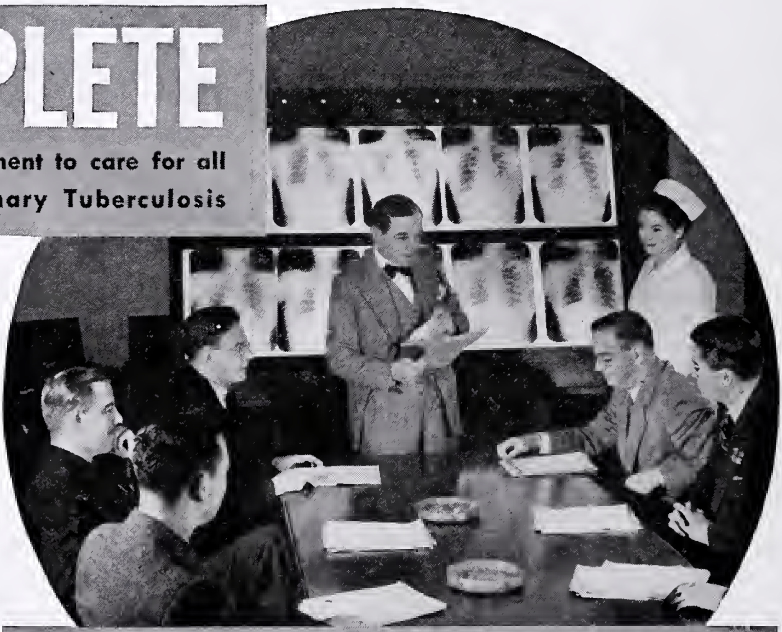
Following Mr. Brindle's talk, many members of the society entered into the discussion.

Louis E. Audet, *Reporter.*

McKEAN

The meetings of the society are held in the Venetian Room of the Hotel Emery, Bradford, the third Tuesday of each month, except July and August. A dinner planned by the entertainment committee is served by the hotel management at 6:15 p. m. The business and scientific meetings immediately follow the dinner.

The Dec. 17, 1940, meeting was the annual meeting at which officers are elected for the ensuing year and no scientific program was scheduled. After the election the incoming president, Edward J. Phillips, took the chair and named his committees. A motion picture



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film on "Pneumonia," including methods of diagnosis, typing, treatment by serum and by chemotherapy and the result, was then shown.

At the meeting held Jan. 21, 1941, after a short business session, Edwin D. Putnam, dermatologist of Olean, N. Y., spoke on "Allergy in Connection with Skin Diseases."

At the meeting held Feb. 18, the members voted that the society contribute $10 to Company K which was to leave soon for training at Indiantown Gap and $10 to Company M of Kane. For the scientific discussion James Sutton Regan, of Buffalo, N. Y., presented "Treatment of Peritonitis Following Ruptured Appendices," illustrated with lantern slides. William C. Hogan, Daniel H. Maunz, Caleb H. Smith, and Francis DeCaria took part in the discussion.

On Feb. 19, Thomas S. Fannin gave a talk on "Venereal Diseases" to the boys of Bradford Senior High School, and on Feb. 26 Persis Straight Robbins spoke on the same subject to the girls of that school.

JOHN L. MORRISON, *Reporter.*

MONTGOMERY

Feb. 5, 1941

The regular meeting was held at Norristown, with 55 present. The scientific paper was presented by Arthur P. Noyes, superintendent of Norristown State Hospital, on "War Neuroses." He said in part:

The subject of war neuroses is again receiving attention because of the European conflict and the induction of a large number of men into American military services. If war neuroses occurred before World War I, they either existed in small numbers or, because

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lacking in dramatic symptoms, were unrecognized. An analysis of over a million British casualties of World War I revealed that neuroses were responsible for 34 per 1000 casualties. In the American Expeditionary Forces the rate was much less, although it constituted a major problem.

War neuroses are largely of two types—hysteria and anxiety states. The hysterical form presents a great variety of symptoms such as tremors, tics, and other irregular movements, disturbances of posture and gait, paralyses, disturbances in the special senses in the form of blindness, deafness, or partial anesthesia. Other forms were aphonia, deaf-mutism, and amnesia. *Careful histories usually reveal that there has been an entertainment of hope on the part of the patient that he would be incapacitated from active service.*

A certain degree of initial disturbance of consciousness favors its development. This disturbance may be anything from a slightly dazed condition associated with some degree of confusion to complete loss of consciousness lasting for several hours. Associated with the disturbance of consciousness there develops some degree of automatism in which the instinct of self-preservation asserts itself. Instead of instinctive flight or concealment taking place, a form of escape usually impossible under the conditions, an equally effective and thoroughly reputable escape is provided in the form of the neurosis.

Whereas hysterical types of neuroses are confined largely to privates, anxiety states greatly predominate among officers, particularly among recently commissioned officers who have not yet attained self-confidence and familiarity with the technical aspects of their profession.

Various names have been applied to a cardiac syndrome which, not associated with any structural lesion, occurred with increasing frequency during World War I and is essentially neurotic in nature. Sir Thomas Lewis suggested that the term "effort syndrome" be given to this syndrome, often known as neurocirculatory asthenia, soldier's heart, irritable heart, and disordered action of the heart (D. A. H.). The main feature is an abnormal physiologic reaction to effort—breathlessness, easy exhaustion, precordial pain, giddiness, blurred vision, vasomotor abnormalities, and fainting. During World War I, 80,000 British soldiers were disabled from this cause.

☞If medical recruiting boards would turn down all men with a history of nervous instability, confirmed by their family physician, and if all those who give a suggestive family history or a bad work record or are otherwise doubtful were referred to a psychiatric ad-

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W. W. Richardson, M.D., *Medical Director*

(Formerly Chief Physician, State Hospital for Insane, Norristown, Pa.)

visory board, the occurrence of neurotic casualties in the military service would be greatly reduced.

Apr. 2, 1941

The regular meeting was held at the home of the society. It was announced that the State Department of Public Assistance has decided on a more liberal policy in paying for medical services. President George R. Irwin presented the speakers of the day: Walter Estell Lee, Jonathan E. Rhoads, and William A. Wolff, Philadelphia. They gave an interesting account of their investigations on the treatment of burns, illustrated by lantern slides.

Burns

Systemic changes produced by severe burns include hemoconcentration, loss of plasma protein, fluid shift, and damage to the viscera, especially the liver and kidney. Capillaries damaged by heat are very permeable to plasma protein, which leaks out into the perivascular spaces and remains as edema. The burned patient is not dehydrated, so that intravenous saline or fluid by mouth increases the edema without improving the circulation. The period of abnormal permeability is some 40 hours, so that during that time only enough plasma is given to keep the hematocrit below 55 per cent cells and the protein level above 6 grams per cent. After that, large transfusions of plasma are given to restore volume and protein level to normal. The addition of adrenal cortical hormone will reduce this time to between 20 and 30 hours. The hepatic insufficiency reaches a maximum 4 to 6 days after the burn, the "toxemia" stage. Albuminuria is observed in a majority of patients.

Treatment

Our present plan of treatment is as follows: Morphine is administered hypodermically, intravenous infusion is started at once, and 200 to 500 c.c. of plasma added from the stock kept on hand in the blood bank. The clothes are then cut away from the affected area, and the patient lifted on to sterile towels. A light ether anesthesia is administered if the condition of the patient will permit. The blisters are then opened and the overlying epidermis rapidly trimmed away with scissors and forceps. If dirt and grease are present, they are first loosened and removed as completely as possible with ether.

The primary tan is then applied with 10 per cent silver nitrate solution. This material is generally swabbed on. We usually follow it by an application of a 1 per cent aqueous solution of gentian violet and another application of 10 per cent silver nitrate solution.

The patient is then transferred directly to a bed made up with sterile sheets and is covered with a heat cradle or shock cabinet so that in the case of body burns he lies completely naked under the sterile canopy. The temperature is maintained between 85° and 90° by means of a thermometer or thermoregulator.

In severe burns, fluids are administered by vein continuously over the first 36 to 48 hours and blood samples withdrawn at intervals of 6 hours for determination of hematocrit and protein concentration.

The usual method of fluid administration is to give 600 c.c. of 5 per cent glucose in water, 200 c.c. of plasma, and 10 c.c. of adrenal cortical hormone in the form of eschatin every 6 hours until the hematocrit is back to normal and the protein concentration well above 6 Gm. per cent. In our experience this usually requires 24 to 30 hours with eschatin, or somewhat over 40 hours without.

After this point in therapy is reached, fluid administration by all routes is maintained at about 3000 c.c. per 24 hours and the patient encouraged to take a nourishing diet composed largely of carbohydrate and protein.

The edges of the eschar are painted daily with 1 per cent gentian violet solution and blebs that form late are opened and the bases tanned with silver nitrate. If the patient does not succumb during the toxemic phase, the problem becomes one of getting the burned areas re-epithelialized and of avoiding infection. The eschar must be watched carefully for accumulations of pus. It may be necessary to cut windows in it from time to time to find out whether or not there is underlying infection. As fast as it loosens, the eschar should be removed. The second-degree areas will usually be found to have healed, but the third-degree surfaces are raw and often dirty. Gauze compresses soaked in tepid saline solution and applied 1 to 3 times daily clean up these areas very rapidly. If infection with Bacillus pyocyaneus occurs, 1 per cent acetic acid solution is used. After the removal of the eschar, powdered sulfanilamide or sulfathiazole as a topical application is valuable in reducing infection and in getting granulating surfaces ready for grafting.

It is important to do this grafting early before the granulation tissue becomes thick enough to cause serious contractures. With this in view we believe it is preferable to apply pinch grafts rather than to wait until the surface is clean enough to receive Thiersch grafts. Not until epithelialization is complete can one relax vigilance or abandon the aseptic technic.

Wallace W. Dill, *Reporter.*

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ALBERT STRICKLER, M.D., *Medical Director*

SCHUYLKILL

Mar. 12, 1941

The regular monthly meeting was held in the auditorium of the Public Library in Pottsville. President Peter B. Mulligan presided. Routine business disposed of, the society unanimously voted to remit the dues of members entering military service in accordance with the prorata plans of the State Medical Society.

The Committee on Conservation of Vision announced that they were proceeding with a campaign so successfully launched last year.

A 3-reel film on "Human Sterility" was then presented, using the recently acquired projectoscope with sound attachment. It was most favorably received.

Apr. 8, 1941

The regular monthly meeting was held at the Elks Club, Pottsville, President Peter B. Mulligan presiding. Routine business was transacted. A spirited discussion of certain phases of handling compensation cases arose, viz., the right of an injured person to select his own physician or hospital. John F. Burke, assistant surgeon at Locust Mountain State Hospital, exhibited a film taken at the hospital on "Internal Fixation of Fractures at the Head of the Femur." It was most instructive and the source of much favorable comment. A discussion of medical topics rounded out a well worth-while evening. T. Lamar Williams, *Reporter.*

WARREN

Mar. 17, 1941

The meeting was held at the Conewango Club in Warren, with 34 members in attendance. Resolutions in memory of Dr. Hiram B. Russell were placed on the minutes.

On account of the inability of the scheduled speakers to come, Leonard Rosenzweig discussed "The Mental Problem of the Adolescent," stating that mental hygiene is simply the application of common sense to problems that have been recognized for many years. It is known that changes occur about puberty and that the effects of these are different in individuals according to the environment and the heredity present. Much patience is required, especially in those whose behavior is antisocial, in order to obtain the sympathetic co-operation of the family and the child. An interesting case was cited.

Hilding A. Bengs, after quoting statistics to show the greater number of elderly persons now living as compared with former years, discussed "The Mental Problem of the Aged." A specialty, "Geriatrics," has been instituted to cover diseases of old age. Dr. Bengs said most of the psychoses of the aged are due to the slow deterioration of bodily functions and the inability of the aged to adapt themselves to the change. Loss of sexual power, weakened memory, and changes in family relations, such as loss of kindred or separation from children, may be the starting of exaggerated emotions.

Senile dementia is an exaggeration of all the changes characterizing decline. The brain cells, the sexual system, the vascular system, and the lens of the eye take part in senile changes, and therefore moderation is required in these activities. The patient must learn how to relax.

Both papers furnished many useful hints.

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A dinner followed the meeting. Drs. Beaty, Buckingham, Briggs, Brown, and Cashman were hosts.

Michael V. Ball, *Reporter.*

SOME CRITERIA ON THE SELECTION OF MEDICAL STUDENTS

Irving S. Cutter, M.D.
Dean, Northwestern University Medical School
Chicago, Ill.

In any community the medical profession is no better than a cross section of its members. As some institution or other has graduated every physician now in practice, the responsibility for standards of service is theirs. If weaknesses are apparent, we may look not at the product but at the raw material from which they have attempted to fabricate the finished product. While a college career cannot alter the inherent traits or the embryonal genes of any man or woman, nevertheless the influence of the classroom in the building of ideals may be substantial. Students come to us, for the most part, neither wise nor deeply learned. It is our job to see that they are no worse off when they leave.

It has been stated that the members of our group are now accorded less respect and less understanding than at any time certainly in the past two generations. Can it be that the faculties of medicine are failing to employ every procedure likely to strengthen character, to mold a generation of influential citizens? While we may question the accuracy of some of these assertions, it can do no harm to indulge in a moderate amount of introspection.

Academically minded young men and women are attracted to our halls. In stressing the technical phases of schooling, have we not deprived our students of many intangibles, certain points of view, that should be numbered among the attributes of a good physician? How can we be sure that we are not swinging the figurative *p*H too far to the acid side, curdling, as it were, the milk of human kindness?

Assured by his college record that the candidate is intelligent, we should ask, "Is he industrious?" A lazy man possessed of brains is dangerous. Emphasis thereafter may be placed on mental stability and on character. Each is a birthright. Neither can be fortified, except in minor degree, by years of tutelage, although both are susceptible to some weakening.

The desire to "get by" which has permeated daily affairs has filtered all too deeply into education. By bitter experience some have learned that a given medical man is not entitled to the confidence that his calling should guarantee. Is it true that instances of this sort are increasing? Every sick individual is a trust that cannot be betrayed. About all that the unprincipled lawyer can do is to steal money. His counterpart in medicine, however, may filch life.

Requisites for Medical Students

I would place character, then, first among those ancillary yet fundamental considerations for admission. Heredity may be studied with profit. Inquire closely into the student's motives for entering medicine. The suggestion that he submit a 500-word autobiography may be helpful.

Next in importance is an intense humanity which must be ingrained—second nature. The unfeeling, indifferent expert possessed of every refinement of skill rates about 10 per cent of par as a counselor when some member of the family is ill. For most of us sickness is an emo-

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tional experience, and as a rule we are unable to dissociate real interest and effective performance. The health of every locality would be enhanced by the presence of a generous-hearted physician. He may not know quite as much as the specialists, but he is faithful in guarding the welfare of his patients; his attention to their ills is so unremitting that disaster comes but rarely. Furthermore, he is the first to call for help when the occasion arises. We must seek and admit to our classes only those students who are capable of understanding and appreciating the doubts and fears that beset the sick.

Next I would suggest that the applicant shall be possessed of certain cultural instincts. The habit of reading good books plus an acquaintance with the world's literature, art, and music does something to a man that makes him a better physician. Our teachers shall live up to and exemplify the best traditions of scholarship. We lost much with the passing of the old-time lecturer whose discourse was a model of diction, glowing with imagery. He had the power to illumine an otherwise dry subject with interest and color.

In addition to good mental pabulum, our neophyte must possess the ability to think logically. After all, diagnosis is little more than a practical exercise in logic. Some possess it; others do not. It is our business to select those who do.

Personality Reflects the Man

Personality more often than not reflects the man and in his smile and demeanor we read his thoughts. Charlatans may cultivate the form but not the substance. The attributes of a gentleman reflect themselves in conduct and we all agree that there is no excuse for the occasional blunt, even brutal, approach to those who are in pain.

In selecting our quality quota we must envision the market. What is the objective of medical training? Is it for service in pure science, research, and investigation? Is it for medical practice, general or special? By far the larger number will engage in practice, alert to new discoveries. A goodly proportion will carry into the field the habits of the laboratory.

Qualities of Good Practitioners

As a profession we have accepted the obligation of caring for the sick. It can be neither shifted nor delegated to less competent hands. If we would preserve our historic ideals, the apotheosis of examination grades only must give way to the consideration of all those qualities that have typified good physicians in all lands in all times. Our admission committees, then, must read between the lines; they must search the background of the prospect and say to themselves "Will this candidate become an honest physician, devoted to his people?" There need be no letdown, not one whit, in our standards of scholastic accomplishment, but let us beware of the "smart" type, so likely to possess a mirror memory but lacking in moral fiber. The healing art needs all talents—a composite of intellectual power.

Merited Public Confidence

Built as it is on many branches of science, using every atom of knowledge that can be garnered, the only hope that medicine has for permanence lies in well-merited public confidence. Otherwise we may become mechanics, record clerks, and laboratory technicians with the punch card system disgorging the diagnosis and indicating treatment. If our plan of selecting medical students is weak, if because of shortsightedness we are drifting into a "system," we may well counsel as to the remedy lest we find ourselves in ruins amid our own good intentions.

Yes, we must demand of those who aspire to follow in the footsteps of the great leaders of medical thought, character, fidelity to duty, and an unsurpassed devotion to the public weal.

Have we held our own in the affairs of our several communities? Perhaps our institutions, eager for scientific discoveries and for the outpouring of papers, have forgotten to stress those worth-while qualities which, after all, are responsible in large part for the contributions of medicine to better and more healthful living. It is the job of our schools to guard their portals valiantly against those who are unworthy. Only then shall we be able to live up to the high estimate of Robert Louis Stevenson, who termed the physician "the flower of our civilization."—*Federation Bulletin,* February, 1941.

BLOOD FOR TRANSFUSIONS SUBJECT TO SALES TAX

Tax collectors have often been called bloodsuckers, sometimes in jest and sometimes in earnest. Now they are taxing blood itself.

New regulations issued by the sales, service, and use tax division of the Colorado state treasurer's office decree:

"Blood is in some instances obtained, classified, stored, and sold in a manner similar to other items of tangible personal property by what are usually termed 'blood banks.'

"Where this item is handled in this manner and dealt with at a definite commercial price, and purchased from a person or persons engaged in the business of selling such item, the sale shall be deemed to be the sale of tangible personal property, and subject to the sales tax."

The Colorado sales tax is 2 per cent.

Blood passed directly from donor to receiver is not taxed. As the Colorado service tax originally stood, it might have been, but in 1938 the legislature, due to protests against collection of the service tax on humanitarian services, repealed it so far as those services are concerned.—*Science News Letter,* Mar. 22, 1941.

These names, these years have helped make modern medical history

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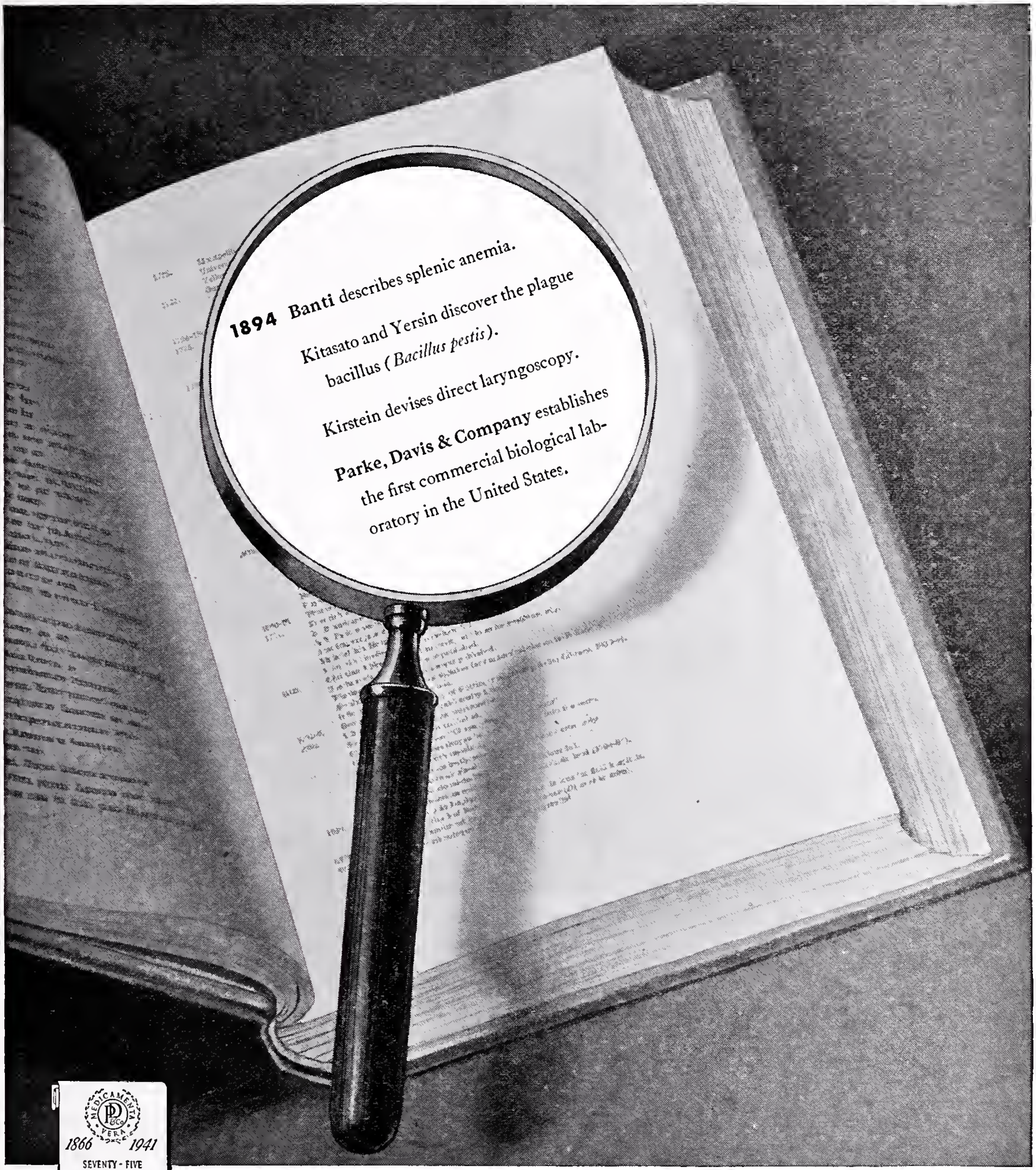

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THE WOMAN'S AUXILIARY

MRS. GEORGE C. YEAGER, *Editor*
1419 E. Susquehanna Avenue
Philadelphia, Pa.

PRESIDENT'S LETTER

Dear Friends:

Last month you read a splendid and informative letter from Mrs. James D. Stark, our public relations chairman. I hope you studied it carefully and gained added information for this all-important work. It is so necessary for our auxiliary to present health subjects to the public whenever possible. As far as I know, we are the only woman's organization which is directly concerned with health propaganda. Ours is a unique opportunity. We should be well informed on all subjects pertaining to health, because of our intimate contact with the medical profession.

It was a happy surprise when I learned that Westmoreland County received one of the cash prizes in the *Hygeia* contest, also Berks County, and our newest county auxiliary, Crawford, received honorable mention. Bucks County and Lebanon County went over their quota and were mentioned in the National *Bulletin*. My congratulations to these counties, and the hope that your success will stimulate others for future contests.

The year is progressing rapidly and soon many of the districts will be having their councilor meetings. Let me urge that as many as possible from each auxiliary attend your own councilor district meetings. They are very interesting and instructive. You can exchange ideas and solve many problems by this method of consultation. Put that meeting, now, on your calendar! Encourage your husband to go. You will both get real inspiration from your association with others in the profession. Then, too, you will get the urge to attend the state convention in Pittsburgh in October. It is so worth while.

As the year draws to a close, review your past activities seriously, and make plans for whatever improvement or changes are necessary for next year's work. Reports are being requested now and these must be expected. They are the only means we have of getting accurate information of your accomplishments. Send them in promptly.

Thanking you for your courtesies and kindnesses, I am

Sincerely yours,
Mary (Mrs. Maxwell) Lick, *President.*

LAST CALL

This is the last call for reservations for the nineteenth annual convention of the Woman's Auxiliary to the American Medical Association, which will be held at Hotel Carter in Cleveland, June 2-6. All Cleveland extends a hearty welcome to you!

ANNUAL CONVENTION OF A. M. A. AUXILIARY

Dear Auxiliary Member:

The nineteenth annual convention of the Woman's Auxiliary to the American Medical Association will be held in Cleveland, Ohio, June 2-6, with headquarters in Hotel Carter.

The Ohio State Auxiliary is delighted to act as hostess for this convention, and joins with the Woman's Auxiliary to the Cleveland Academy of Medicine and Cuyahoga County Medical Society in extending to each and every auxiliary member a most cordial welcome to attend this meeting. Cleveland, so beautifully situated on the shores of Lake Erie, has much to offer the visitor, and the Arrangements Committee is making every effort to present a most interesting and beneficial program of events.

Make your reservation *now* with Dr. Edward F. Kieger, chairman of the Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland. Detailed information on rates at the Hotel Carter was published in the Winter 1940-1941 issue of the *Bulletin* of the Woman's Auxiliary to the American Medical Association.

Cordially yours,
Florence H. (Mrs. Fred C.) Oldenburg,
Convention Chairman.

Mar. 20, 1941.

COUNTY AUXILIARY REPORTS

Allegheny.—Two of the crowning events of our auxiliary year are over—our Health Day program on Mar. 25, and the annual Medical Benevolence Fund benefit the night of Mar. 27. The first event brought together President Francis F. Borzell, of The Medical Society of the State of Pennsylvania, and President Frederick M. Jacob, of the Allegheny County Medical Society.

Dr. Jacob introduced Dr. Borzell, who spoke briefly on personal interest in one's health and the education of the different members of the family in the sound principles of health.

After Dr. Borzell's talk, Mrs. Edna H. Pearson spoke to the group about the extensive health education program of the State of Pennsylvania. No other state in the Union provides for its laity the authentic health knowledge that our state is willing to give to all who seek such instruction.

Mrs. Pearson's talk was followed by sound "movies," provided by the Public Relations Committee of the State Medical Society, demonstrating the medical profession's great fight against tuberculosis, cancer, and heart disease, through the medium of health education of the laity.

The annual benefit party is held to raise funds for the Medical Benevolence Fund of The Medical Society of the State of Pennsylvania, dedicated to the assistance of aged and infirm members and their dependents.

Berks.—The auxiliary held a St. Patrick's party in Medical Hall, Reading, on Mar. 10. Mr. Charles Haenssler entertained the group with "Feats of Illusion."

At the business meeting, it was reported that $200 had been contributed to the Medical Benevolence Fund. Instruments, to be reconditioned for the British, were solicited. One hundred and eighty-eight subscriptions to *Hygeia* were secured, and, as a result, we received honorable mention from the national auxiliary. One new member was welcomed.

A representative from the Camp Fire groups, celebrating their twenty-ninth anniversary, gave an interesting résumé of that organization's ideals and accomplishments. Her theme was "Treasure Trails"—the project for 1941.

Chester.—The auxiliary met on Mar. 18 at the home of Mrs. Clarence S. Kurtz, Malvern, with Mrs. Kurtz and Mrs. Robert C. Hughes as hostesses at a delightful covered dish luncheon. There was a good attendance of members at the luncheon and the meeting which followed.

The auxiliary was fortunate in having as its guest and speaker, Mrs. Augustus S. Kech, from the Division on Education of the State Health Department, who was introduced by Mrs. John A. Farrell. Mrs. Kech spoke in a most informative and interesting manner of the work of her division, and the progress that has been made in health education in Pennsylvania in regard to the control of disease. Mrs. Kech's talk was much enjoyed and appreciated.

The business meeting followed. A balance of $58.52 was reported in the treasury. Several meetings in the near future were announced, among which was the annual health institute in Philadelphia to be held on Apr. 8. Mrs. Farrell and Mrs. Gifford were to represent the auxiliary at this meeting.

The next meeting of the auxiliary was to be held jointly with the Chester County Medical Society at the Coatesville Country Club on Apr. 9, which is an annual affair.

Crawford.—A meeting was enjoyed at Town House, Meadville, on Feb. 19, with two guests, Mrs. Erwin D. Zeman and Mrs. Ernest L. Armstrong, of Erie, whose husbands were speakers at the Crawford County Medical Society meeting held the same night. Mrs. Richard L. Bates was hostess, assisted by Mrs. Edward H. Connor and Mrs. S. Frank Hazen. George Washington's birthday was appropriately observed by the use of Chinese cherry trees as table decorations. An evening of bridge followed the brief business meeting, prizes being awarded Mrs. Armstrong, Mrs. Joseph A. Mancuso, Mrs. Herman H. Walker, and Mrs. John C. Davis.

Several important business items were discussed and disposed of at the monthly meeting of the executive board at the home of the president, Mrs. Vincent G. Hawkey, Mar. 11.

The auxiliary dinner for the month was held at "Tom and Jane's Inn" on the Conneaut Lake Road, Mar. 19. Mrs. Luther J. King was hostess with Mrs. Samuel Gottlieb and Mrs. Oliver H. Jackson assisting. During the business session a nominating committee for the May election of officers was selected. Mrs. John P. Hobson, philanthropic chairman, presented $10 which was contributed by the Medical Helpmeets' Duckpin League for the Medical Benevolence Fund. Tentative plans were made for the meeting at Titusville on Apr. 16. Miss Helen Easterwood, Juvenile Court officer and case worker for the Children's Aid Society, entertained the auxiliary with a talk about her work. Members from Conneautville, Conneaut Lake, Cochranton, Linesville, Springboro, and Meadville were present at the dinner.

Delaware.—The regular monthly meeting was held in the solariun of the Chester Hospital on the evening of Mar. 13. After routine business, we acted upon and adopted certain amendments to our by-laws to facilitate our general elections, modeling our procedure after that of the state organization.

The speaker for the evening was Mrs. Ethel Knox Fable, who supervises the adoption of children for the Children's Aid Society of Philadelphia. Mrs. Fable spoke most interestingly about her experiences in her work, and a very lively interest was evidenced by the members.

At the close of the meeting, appropriate St. Patrick's Day refreshments were served and a social time was enjoyed by everyone.

Erie.—The auxiliary has had 3 informative and well-attended meetings in 1941. On Jan. 6, at the home of Dr. and Mrs. Elmer Hess, Dr. Paul Giddons, of Allegheny College, spoke on "World Events." On Feb. 3, at the home of Col. and Mrs. Percy Jones, Mr. Burton Laub, assistant district attorney, spoke on "Crime." On Mar. 3, at St. Vincent's Hospital, Erie, Mr. C. W. McNary, assistant superintendent of schools, spoke on "Changing Phases in Our Public Schools." A tea and social hour followed each meeting.

Lackawanna.—On Mar. 11 a regular meeting was held at the Chamber of Commerce Building, Scranton. Mrs. Louis A. Milkman, president, presided. A moment of silence was observed as a tribute to the memory of Mrs. Joseph F. Comerford, an active and loyal auxiliary member, who died on Mar. 10.

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1939. Accepted Foods and Their Nutritional Significance, Council on Foods of the American Medical Association, Chicago.

1939. Food and Life; Yearbook of Agriculture, U. S. Dept. of Agriculture, U. S. Government Printing Office, Washington, D. C.

1939. Canned Food Reference Manual, American Can Company, New York.

1938. Nutrition Abstracts and Reviews 8, 281.

The Seal of Acceptance denotes that the nutritional statements in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

Mrs. J. Norman White, program chairman, then introduced Mrs. Salo Friedewald, who read "H. M. Pulham, Esquire" by John P. Marquand. Tea followed with Miss Gretchen Houser, entertainment chairman, in charge. Mrs. Irwin W. Severson and Mrs. Walter J. Larkin presided at the tea table which was most attractively centered with pink lilies and tapers in blue pottery containers. Members were privileged to bring guests.

Lehigh.—On Feb. 11 the auxiliary entertained a large gathering of members and their guests at a Valentine bridge-tea in the Woman's Clubhouse, Allentown. Nearly 125 women played contract and auction bridge and "500" and later enjoyed a delightful tea. Mrs. J. Treichler Butz, Mrs. Victor J. Gangewere, Mrs. William A. Hausman, and Mrs. Ralph F. Merkle presided at the attractively decorated tea tables carrying out the Valentine theme.

Mrs. H. Warren Endres, of Fogelsville, ways and means chairman, and Mrs. John H. Hennemuth, of Emmaus, hospitality chairman, with their committees arranged for the successful party.

The regular monthly meeting was held on Mar. 11 at the Woman's Clubhouse, Allentown. Mrs. Elmer H. Bausch, president, was in charge of the business session, during which the auxiliary voted a contribution to Greek war relief and to collect medicines for British war relief.

Mr. Blake Hobbs addressed the meeting briefly, explaining the new telephone system for physicians' homes. Mrs. Forrest G. Schaeffer gave an excellent dramatic reading of Alice Duer Miller's beautiful epic poem, "The White Cliffs." Mrs. John H. Hennemuth sang two contralto solos, and Mrs. Carl J. Newhart, of Hokendauqua, accompanied her at the piano. Mrs. Harry E. Klingaman, of Emmaus, is program chairman.

Following the program a St. Patrick's tea was arranged by the hospitality committee.

Philadelphia.—At the stated meeting, Mar. 11, we celebrated our sixteenth birthday, and each year has marked a steady growth of our auxiliary. At that time a reception was tendered to our new members. Dr. Philip Q. Roche, psychiatrist to the Eastern Penitentiary, spoke on "The Adolescent Offender as a Patient." Alejo Campo and the Hispanic Dance Group presented a "Fiesta Espanola" accompanied by mandolins and guitars. This fiesta was given during a medical convention in Seville, Spain. Tea was served with a piece of birthday cake for each one.

On Mar. 6 and 7 two very lovely teas were given by Mrs. Leonard G. Rowntree and Mrs. Edward W. Beach at Mrs. Rowntree's home for the wives of postgraduate doctors. Everything is being done by these two hostesses to make these young women feel at home in our city.

On Mar. 14 we had a card party, fashion show, and cake sale in Snellenburg's auditorium, which proved a great success and will net us over $275.

The next activity will be the Eleventh Annual Health Institute on Apr. 8.

Washington.—On Jan. 29 Mrs. Maxwell Lick, of Erie, president of the State Auxiliary, was entertained at a luncheon in the Mount Vernon Room of the George Washington Hotel, Washington.

In a brief address Mrs. Lick stated the projects for which she is working. These include emphasis on the public health program sponsored by the auxiliary, work for the Medical Benevolence Fund, and a drive for increased membership. Other guests introduced during the program were Mrs. James H. Corwin, councilor of the Eleventh District, and Mrs. Albert J. Blair, president of the Greene County Auxiliary.

Mrs. David H. Ruben, president of our auxiliary, presided. She was assisted in the arrangements by Mrs. Samuel A. Ruben and Mrs. Orville G. Lewis, members of the hospitality committee.

A meeting of the auxiliary was held on Feb. 12, at 8 p. m., in the home of Mrs. David M. Dunbar, Buffalo. Mrs. David H. Ruben, president, presided.

The guest speaker was Dr. Raymond Bell, of Washington and Jefferson College, who discussed "The Romance of Names." Dr. Bell, in a very interesting manner, traced the derivation of family names and

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Aiding the hostess were Mrs. J. W. G. Hannan, Mrs. Oscar T. McDonough, Mrs. Arthur E. Morgan, and the hospitality committee.

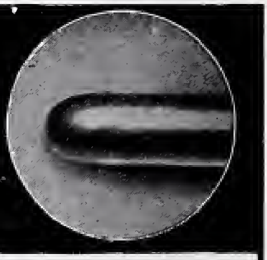
On Friday afternoon, Mar. 7, the regular meeting of the auxiliary was held at the Washington Seminary. It was a joint meeting with the Child Welfare Circle of Washington. Both organizations were entertained by a recital given by the Seminary Speaking Choir, conducted by Mrs. Ernest Waltz. A social tea followed.

York.—The annual spring luncheon of the auxiliary was held on Mar. 11, at 1 p. m., at the Yorktowne Hotel, York. Mrs. Thomas A. Monk was toastmistress. Dr. Beulah Sundell was the principal speaker and spoke very instructively and entertainingly on the subject, "Medical Pioneers." The luncheon table was attractively decorated with spring flowers.

Mrs. Elwood P. Flanders presided over the business session. Program arrangements were made for the balance of the year as well as the card party to be held Mar. 18 for the benefit of the Medical Benevolence Fund.

HOW LONG AGO IT SEEMS!

In 1859 Mr. Richard C. Downing, superintendent of sanitary inspection of New York City, said, "I consider it very unjust to give the health inspector of the City of New York power to quarantine a house where there is smallpox."—*Better Times,* Dec. 13, 1940.



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MEDICAL NEWS

Births

To Dr. and Mrs. Wilson A. Foust, of New Holland, a son, Jan. 27.

To Dr. and Mrs. Joseph Appleyard, of Lancaster, a son, Feb. 8.

To Dr. and Mrs. John L. Atlee, Jr., of Lancaster, a son, Feb. 22.

Engagements

Miss Gordon Schoff, daughter of Dr. and Mrs. Charles H. Schoff, of Media, and Mr. Lewis T. Riddell, of Springfield.

Miss Pauline Hatch, daughter of Dr. and Mrs. L. Clement Hatch, and Dr. Dawson Heather Huber, Jr., all of Drexel Hill.

Miss Jane Messenger, of Wyndmoor, and Mr. John Martin Broomall, son of Dr. and Mrs. Harold S. Broomall, of Philadelphia.

Miss Helen Randolph Daniel, of St. Davids, and Mr. William Louis Rodman, 2d, son of Dr. and Mrs. J. Stewart Rodman, of Wynnewood.

Miss Elizabeth Reed Nichols, of Philadelphia, and Homer B. Wilcox, Jr., M.D., son of Dr. and Mrs. Homer B. Wilcox, of Kingston.

Marriages

Miss Nettie Stewart to Connell Hutchison Miller, M.D., both of Sligo, Mar. 14.

Miss Josephine Motta, of Plains, to Hubert N. Jones, M.D., of Wilkes-Barre, Mar. 1.

Miss Helen Fitzpatrick, of Upper Darby, to Reginald N. Stroup, M.D., of Harrisburg, Jan. 23.

Miss Gertrude C. Bemus, of Baltimore, to Mr. Walter H. Killian, son of Dr. and Mrs. Wayne T. Killian, of Philadelphia, Apr. 12.

Miss Dorothy E. Reist, of Jenkintown, to Robert P. McCombs, M.D., son of Dr. and Mrs. Robert S. McCombs, of Philadelphia, Apr. 14.

Clara G. Wertine, M.D., resident physician at the Harrisburg Hospital, to Dr. James F. Gilmer, a dentist in the Army at Indiantown Gap, Apr. 5.

Miss Elizabeth Hubbard, of Summit, N. J., to Mr. James Truman Barnard, of Cleveland Heights, Ohio, son of Dr. and Mrs. Everett Pusey Barnard, of Bryn Mawr, Apr. 19.

Deaths

○ *Indicates membership in county medical society, The Medical Society of the State of Pennsylvania, and the American Medical Association.*

Colin R. Weirich, Bridgeville; Jefferson Medical College, 1882; aged 84; died on Mar. 11. Dr. Weirich was a graduate of Washington and Jefferson College and was a former member of Washington County Medical Society. For 18 years he was on the staff of Cresson Sanatorium.

○ **Thomas M. McLenahan,** Pittsburgh; College of Physicians and Surgeons, Baltimore, Md., 1893; aged 74; died at his home on Mar. 7 after a brief illness. Dr. McLenahan was a graduate of Grove City College. He had practiced medicine in Pittsburgh for 45 years and recently retired.

○ **Emerson E. Darlington,** New Bloomfield, formerly of Harrisburg; Maryland Medical College, Baltimore, 1900; aged 66; died at his home on Mar. 16. Dr. Darlington was a member of the Harrisburg Academy of Medicine and formerly a consulting physician on the staff of the Polyclinic Hospital, Harrisburg. He is survived by his wife.

○ **William Lee Clark,** Harrisburg; Johns Hopkins University Medical School, 1923; aged 46; died at his home on Feb. 28. In 1925 Dr. Clark served an internship at Johns Hopkins Hospital in orthopedic surgery under the late Dr. William S. Baer. He was a member of the staff of the Harrisburg Hospital. He is survived by his wife.

○ **Robley D. Snively,** Philadelphia; Medico-Chirurgical College of Philadelphia, 1895; aged 69; died at his home on Mar. 15 of heart disease. Dr. Snively was on the staffs of the Germantown, Abington, and National Stomach Hospitals. He served during the World War as a Director of Service Examiner. He is survived by his wife and 2 sons.

Penrose H. Marquette, Shamokin; University of Pennsylvania School of Medicine, 1925; aged 42; died suddenly on Mar. 23 from an acute heart condition. He was a prominent sportsman and trapshooter, and was a former member of the Northumberland County Medical Society, having retired from active medical practice. He is survived by his wife.

○ **Elizabeth A. Ryder,** Devon; Woman's Medical College of Pennsylvania, 1891; died in Bryn Mawr Hospital on Mar. 14. Dr. Ryder was one of the first woman physicians to specialize in neuropsychiatry. She was former consultant in neurology on the staff of the Women's West Philadelphia Hospital. Dr. Ryder founded the Alcluyd Hospital and Sanitorium in Devon, in 1897, where she also made her home.

○ **Meyer B. Lichtenstein,** Pittsburgh; University of Pittsburgh School of Medicine, 1910; aged 57; died on Mar. 11 in Miami, Fla., following a prolonged illness. Dr. Lichtenstein was a leader of the Zionist Movement in Pittsburgh and nationally for many years. He was on the staff of Montefiore Hospital. He was a native of Lithuania and at the time of his death was a vice-president of the American Jewish Congress and honorary president of the Jewish National Front. He is survived by his wife, a son, and a daughter.

○ **Bruce Lichty,** Meyersdale; University of Pennsylvania School of Medicine, 1892; aged 75; died on Mar. 8 from an acute heart condition which was believed to have been induced by a fire which destroyed his home two weeks before. Dr. Lichty was prominent in civic affairs in his community. He served 18 months in the Medical Corps with the American Expeditionary Forces during the World War. Dr. Lichty was twice married, his first wife having died a number of years ago. He is survived by his second wife and 2 daughters.

○ **John J. Dailey,** McAdoo; Medico-Chirurgical College of Philadelphia, 1905; aged 57; died on Mar. 28 from coronary thrombosis. Dr. Dailey was a past president of Luzerne County Medical Society and of Schuylkill County Medical Society, of which he was formerly a member, also of the Philadelphia General Hospital Ex-residents' Society. He was a member of the New England Association of Railway Surgeons and a Fellow of the American Medical Association.

He was surgeon for a number of industrial corporations. Dr. Dailey is survived by 3 daughters and a son.

○ **Collier F. Martin**, Philadelphia; University of Pennsylvania School of Medicine, 1900; died on Mar. 22, aged 68. Dr. Martin was vice dean of the Graduate School of Medicine of the University of Pennsylvania, and from 1907 until his resignation in 1923 was professor of proctology at Temple University School of Medicine. In 1919 Dr. Martin was appointed professor of proctology at the University of Pennsylvania Graduate School and chief of the Proctology Service at the Graduate Hospital, retaining both positions until the time of his death. He was the author of a number of articles on proctology. He is survived by his wife and one daughter.

○ **William F. Roth**, Wilkes-Barre; Hahnemann Medical College and Hospital of Philadelphia, 1894; aged 69; died Apr. 1, at his home in Kingston, of a cerebral hemorrhage. Dr. Roth was born in Frederick, Md. Following his graduation from medical college he served for 2 years as resident physician at Wills Eye Hospital in Philadelphia, and did further postgraduate work at New York Polyclinic Hospital. He was a member of the original staff and one of the founders of the Wyoming Valley Homeopathic Hospital. Dr. Roth is survived by his widow and 2 sons, Joseph F. and William F., Jr., both of whom are practicing physicians in Wilkes-Barre.

○ **James W. Robinson,** Pittsburgh; University of Pennsylvania School of Medicine, 1907; aged 56; died on Mar. 23. Dr. Robinson was a descendant of a pioneer Allegheny County family. He was one of the first to volunteer for service with the University of Pittsburgh Hospital Unit at the beginning of World War I. He entered the service as first lieutenant, served with the field unit of Base Hospital No. 27 in France, and was promoted to captain. Dr. Robinson was associate professor of surgery at the University of Pittsburgh and a member of the Society of Biological Research and the American College of Physicians and Surgeons. He is survived by a brother, Charles I. Robinson, M.D., of Huntingdon County.

○ **Walter F. Enfield**, Bedford; Medico-Chirurgical College of Philadelphia, 1894; aged 69; died Apr. 11, at his home, of carcinoma of the pancreas. Dr. Enfield practiced medicine in Bedford for 48 years, his father also a physician having removed to Bedford from Somerset County many years ago. He was a trustee of the Pennsylvania Industrial School at Huntingdon and for nearly 20 years was Pennsylvania Railroad surgeon at Bedford. Dr. Enfield belonged to a family enriched by the medical tradition, and brought to his practice a kindly spirit and well-rounded philosophy, which gained for him the respect and affection of his patients. His career was in the spirit of the faithful small town general practitioner who blends a knowledge of human nature with the deft cure of all varieties of illness. He is survived by 3 sons and 1 daughter, 2 of the sons being practicing physicians, Thomas W., of Philadelphia, and George S., of Bedford.

○ **William Henry Walsh**, Chicago, Ill.; Medico-Chirurgical College of Philadelphia, 1909; aged 59, died on Mar. 29 in Billings Hospital, Chicago, following an operation. Dr. Walsh was one of the country's leading consulting experts on hospital planning and organization. He served with the Army Hospital Corps during the Philippine insurrection in 1899 and 1900, later becoming chief sanitary inspector of the Insular Bureau of Health in the islands. In 1911 he joined the U. S. Public Health Service as surgeon, and from that time until World War I was superintendent, chief surgeon, and medical director of various Philadelphia hospitals. During the war Dr. Walsh served as a major on the staff of the Surgeon General of the Army and as commandant of Base Hospital 58 at Camp Grant, Ill., and in France with the rank of lieutenant colonel. He was twice appointed executive secretary of the American Hospital Association and at the time of his death was special consultant to the Chicago Health Department. Although he had lived for many years outside Pennsylvania, Dr. Walsh had maintained membership continuously in the Philadelphia County Medical Society. His widow and a son survive.

○ **Jacob Paul Frantz, Sr.**, Clearfield; University of Pennsylvania School of Medicine, 1910; aged 55; died on Apr. 8. At the time of his death Dr. Frantz was a member of Borough Council, vice-president and long a director of the Y. M. C. A., president of the Clearfield County Tuberculosis Society (of which he was one of the organizers), chief of the medical staff of the Clearfield Memorial Hospital, and president of the local community chest. He was born in Lancaster, and was graduated from Franklin and Marshall College in the premedical course in 1906. Dr. Frantz served his internship at St. Joseph's General Hospital, St. Christopher Hospital for Children, and Lying-In Charity Hospital, now part of the Pennsylvania Hospital, Philadelphia.

During World War I Dr. Frantz was a member of the medical examining board for army recruits, and in the summer of 1918 enlisted for army medical service, was commissioned a first lieutenant and ordered to report to the Army Tuberculosis Division at Boston. However, a plea from Clearfield for help to fight a flu epidemic and a petition to Washington returned Dr. Frantz home again. He was appointed medical staff chief when the staff was organized at the Clearfield Hospital in 1918 and was president for some time of the Clearfield Board of Health.

Dr. Frantz was ex-chairman of the Clearfield Chapter of the American Red Cross, and since 1930 had been secretary of the Clearfield County Medical Society. He had been Pennsylvania Railroad physician for Clearfield and vicinity since 1919, and at the time of his death was physician for the borough schools.

Dr. Frantz was a governor for Pennsylvania of the American College of Chest Physicians and a member of the American Public Health Association. Surviving are his widow, 3 daughters, and 2 sons.

Mrs. Margaret Tucker Landis, widow of H. Robert Murray Landis, M.D., died suddenly, Mar. 12, at her home in Haverford.

I. Norman Broomell, D.D.S., dean of the School of Dentistry at Temple University since 1918, died Mar. 23, aged 82.

Miscellaneous

The Orleans Parish Medical Society, New Orleans, La., announces a residency in medical library work.

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John J. McHugh, M.D., of Wilkes-Barre, has been elected vice-president of the Jefferson Alumni Association.

Joseph J. Toland, Jr., M.D., of Philadelphia, has been appointed medical director and chief surgeon at the Nazareth Hospital, Philadelphia.

The next annual meeting of the Association of Military Surgeons of the United States will be held in Louisville, Ky., Oct. 29 to 31, 1941.

The seventeenth scientific meeting of the American Heart Association will be held May 30-31, 1941, at the Hotel Statler, Cleveland, Ohio.

According to the *Pittsburgh Medical Bulletin* of Mar. 8, 168 Allegheny County physicians are today serving the nation as draft board physicians without remuneration.

William Osler Abbott, M.D., of Philadelphia, addressed the Medical Society of the County of Westchester at White Plains, N. Y., Feb. 18, on "Clinical Uses of Long Intestinal Tubes."

At the meeting held at the Harrisburg Academy of Medicine on Feb. 18, Murray M. Copeland, M.D., professor of research surgery at Johns Hopkins University Medical School, gave an address on "The Clinical Management of Diseases and Tumors of the Breasts."

Wilmer Krusen, M.D., president of the Philadelphia College of Pharmacy and Science since 1927, announced his retirement on Mar. 31. Dr. Ivor Griffith, dean of pharmacy since 1938, was selected to fill the post. Dr. Krusen was elected president-emeritus.

The sixty-fifth annual convention of the American Association on Mental Deficiency will be held in Salt Lake City, Utah, June 20-24, 1941. The headquarters will be at the Hotel Utah. E. Arthur Whitney, M.D., of Elwyn, Pa., is secretary-treasurer of the association.

Ellen C. Potter, M.D., former State Secretary of Welfare during the Pinchot Administration, has succeeded Chevalier Jackson, M.D., as acting president of the Woman's Medical College of Pennsylvania. Dr. Jackson recently submitted his resignation to the institution's board of corporators.

Plans are being made to have a bowling tournament during the next meeting of the American Medical Association. It is hoped that teams can be formed representing various states. Physicians who are interested in bowling should contact Lewis W. Bremerman, M.D., 1709 West 8th St., Los Angeles, Calif.

The Pittsburgh Pediatric Society held their annual dinner and meeting on Apr. 18 at the University Club, Pittsburgh. The guest speaker was C. Anderson Aldrich, M.D., chief of staff of Children's Memorial Hospital, Chicago. His subject was "Ancient Processes in the Scientific Age—Feeding Aspects."

The Pathological Society of Philadelphia conducted the Annual Conversational Lecture on Mar. 13 at the College of Physicians. The subject was "Forensic Pathology," and the speaker was Alan Richards Moritz, M.D., professor of legal medicine, Harvard University Medical School.

Charles E. Kenworthey, Esq., of Philadelphia, for 5 years legal counselor to The Medical Society of the State of Pennsylvania, has been appointed a judge of the Superior Court of Pennsylvania to serve until Jan. 1, 1942. His continuation in office beyond that date will depend upon the outcome of the November, 1941, election.

William H. Guy, M.D., professor of dermatology at the University of Pittsburgh School of Medicine, was inducted into office as president of the American Dermatological Association in New Orleans on Apr. 8. Joseph V. Klauder, M.D., associate professor of dermatology at Jefferson Medical College, Philadelphia, was made president-elect at the annual election of officers.

The R. W. Stewart Memorial Lecture was delivered on Mar. 11, at 8:30 p.m., at the Academy of Medicine, Pittsburgh. The speaker was Virgil H. Moon, M.D., professor of pathology at Jefferson Medical College and Hospital, Philadelphia. His subject was "The Origins, Early Recognition, and Management of Shock." The lecture was preceded by a dinner in honor of the speaker at the University Club.

At the meeting of the Philadelphia Pediatric Society held at the Hall of the College of Physicians, Mar. 11, at 8:30 p.m., "Obstetric Anesthesia as It Affects the Baby" was presented by Clement A. Smith, M.D., Department of Pediatrics, Harvard University Medical School. Robert D. Dripps, M.D., Department of Pharmacology, University of Pennsylvania, discussed "Management of Depressed Respiration in the Newborn Infant."

James L. McCartney, M.D., associate director of the Medical Division of Sharp & Dohme, Inc., and editor of the "Sharp & Dohme Seminar," has been appointed medical director of William R. Warner & Co., Inc., New York City, and affiliate organizations, effective Apr. 1. Dr. McCartney graduated from Rush Medical College, University of Chicago, and has been associated with Sharp & Dohme since 1938. In his new position Dr. McCartney will be chief medical advisor to William R. Warner & Co., Inc., and in charge of clinical research, in co-operation with the Warner Institute for Therapeutic Research, which is under the direction of Dr. M. R. Thompson.

The thirty-seventh annual meeting of the National Tuberculosis Association, the thirty-sixth annual meeting of the American Trudeau Society, and the seventeenth annual meeting of the National Conference of Tuberculosis Secretaries was recently held as a joint preliminary meeting at San Antonio, Tex., May 5 to 8. The following papers were presented by Pennsylvanians: "Management of Films and Projectors," by Arthur M. Dewees, M.D., executive secretary of the Pennsylvania Tuberculosis Society, Philadelphia, and "The Value of Bronchoscopy in Diseases of the Chest," by Chevalier L. Jackson, M.D., Philadelphia.

The forty-ninth annual meeting of the Pennsylvania Tuberculosis Society was held in Erie during the week of Apr. 13.

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BOOK REVIEWS

PSYCHOBIOLOGY AND PSYCHIATRY. A Textbook of Normal and Abnormal Human Behavior. By Wendell Muncie, M.D., associate professor of psychiatry, Johns Hopkins University; assistant psychiatrist, Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital. With a foreword by Adolf Meyer, M.D., LL.D., Sc.D., Henry Phipps professor of psychiatry and director of the Department of Psychiatry, Johns Hopkins University. With 739 pages and 69 illustrations. St. Louis: C. V. Mosby Company, 1939.

For many years Dr. Adolf Meyer has led the psychobiologic school of psychiatric thought of which he is the founder. Johns Hopkins University and Phipps Clinic have been the teaching ground. This is the first comprehensive and authoritative presentation in book form of his teachings. The work is essentially a textbook, and in addition sets forth the technic of psychobiology and describes the teaching methods employed at Johns Hopkins.

Dr. Muncie is to be commended for his specific and detailed suggestions as to the questions to be propounded to the patient in developing information; for his free use of illustrative case material from the files of the Phipps Clinic; and for his well-organized presentation of the subject.

The classification of mental diseases in this work follows the Meyer terminology, which has not been generally accepted in medicine, but which has a sound and constructive basis. From the standpoint of the practitioner, the section on treatment is disappointing in its brevity and its generalized rather than specific approach.

The final section of the book is devoted to a unique and comprehensive bibliographic survey covering the conceptual development of the principal reaction types. This is an excellent presentation, of value to the student or author who desires a detailed historic survey of the growth of psychiatric viewpoints throughout the world. It is, however, hardly essential to this book and its purposes.

All in all, the work meets a real need in our psychiatric literature, and should be in the library of the psychiatrist and the student of psychiatry. It will not be particularly helpful to the physician who is seeking a short-cut to psychiatric diagnosis and treatment.

HEIL HUNGER! Health Under Hitler. By Martin Gumpert. Translated from the German by Maurice Samuel. New York: Alliance Book Corporation, 1940. Price, $1.75.

Deriving his information from authentic Nazi sources, medical statistics in technical German magazines and statements made by Nazi medical bigwigs, Dr. Gumpert unbiasedly shows us an interesting angle on the new order being developed by Herr Hitler.

The facts regarding population increase, infant mortality, incidence of rickets, venereal diseases, alcoholism, suicide and lunacy, tuberculosis, and other public health problems are glaringly revealed. The principle or watchword of the National Socialist régime is "not consideration but achievement," and accordingly the humanitarian side of medical practice is almost completely abandoned. The excesses of physical exertion demanded of both young and old are such that individual capabilities are completely lost sight of and there is a steady numerical increase in the physical inadequacy of the rising generation.

The facts regarding alcoholism are representative of the "achievement of Naziism." Venereal disease is steadily on the increase due to the sexual excitation which is promoted and protected by the propaganda of the famous Jew-baiter Streicher—for the avowed purpose of increasing the birth rate. This same Streicher has to his credit the attack on salvarsan treatment and the Wassermann test on the ground that they are Jewish inventions aimed at poisoning the German people.

Under the severe demands for labor, even tuberculars are requisitioned, and such a statement as "open lung tuberculosis must always be regarded as consistent with working capacity" is representative of the propagandized medical opinions now rampant in Germany. The decline of the adequate diet and its replacement by ersatz is revealed in this small volume. The status of the medical profession and the admission of quacks and cultists into the first ranks of the profession are likewise exposed. Finally, the present-day situation of Germany under the terrific strain of totalitarian war is described in such a way that every member of our profession must become aware of the dangers which may await us if our country were to be overrun by the Nazis.

This little book is dynamite and deserves the attention of every physician who treasures the democratic privileges which are his today.

ASTHMA AND THE GENERAL PRACTITIONER. By James Adam, M.A., M.D., F.R.F.P.S.G., surgeon-in-charge, Asthma Clinic, Stobhill Hospital, Glasgow; surgeon for diseases of ear, nose, and throat, Lanarkshire County Council Hospitals. A William Wood Book. Baltimore: The Williams & Wilkins Company, 1939. Price, $2.00.

When a new concept of a disease is introduced into the literature or begins to circulate into the general whirlpool of medical knowledge, it is often unnoticed and uncriticized. But after the new ideas circulate for awhile, they gain recognition, both favorable and unfavorable. In time, depending upon their basic value and truthfulness, they either disappear or last in a permanent form.

An example of the new concept is to be found in Adam's little book for the practitioner on the enigmatic subject of asthma. Bronchial asthma is the main point of discussion, and where the author departs radically from the present-day viewpoint in his ideas regarding the etiology of this condition. He stresses the importance of a toxicosis or chronic toxemia, manifested by a "dirty blood" showing eosinophilia and exerting itself over "week-ends" and in pampered "only children." Hypo-adrenalism and parasympathetic overfunction are given full credit for the part they play. The question of a hereditary factor in asthma comes under direct fire, for the author propounds the theory that asthma is bred—not born. Here is another radical viewpoint, but it is well supported by the author.

As to treatment, Dr. Adam stresses the importance of accurate history-taking and careful investigation of the environment and habits. But, instead of skin testing and desensitization which are stressed by the allergists, the author states the importance of a weekly mercurial, avoidance of milk (especially raw), calcium therapy, acidification of gastric juices (usually deficient), and vitamin therapy. The nose should be looked into and any infection or defects removed. Breathing

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exercises and general roborant toning up by changes in habits of living are of primary importance. Drug therapy is given fair consideration in a very practical way, from which the general practitioner may well benefit.

Time alone can judge the correctness of the author's ideas. He seems to have established himself firmly among his colleagues in England and substantiates his ideas with a long series of cases observed over a period of many years. He certainly offers a favorable prognosis to the asthmatic, and the practitioner may well benefit from reading this instructive volume, if only to derive the spirit of optimism toward asthma with which its pages are imbued. Perhaps if the doctrine of "once asthmatic—always asthmatic" were to be stricken from our minds, we would try to do more for these unfortunates than skin tests and prescribing ephedrine preparations while desensitizing them hopefully.

BIOLOGICAL SYMPOSIA. Edited by Jaques Cattell, editor of *The American Naturalist* and *American Men of Science*. With a foreword by Albert F. Blakeslee, director of the Department of Genetics, Station for Experimental Evolution of the Carnegie Institution of Washington, and president of the American Association for the Advancement of Science. Lancaster (Pa.): The Jaques Cattell Press, 1940. Price, $2.50.

This volume contains the principal papers presented at the Richmond, Va. (December, 1938) meeting of the American Association for the Advancement of Science, the botanical, zoological, and historical sections participating.

Symposia upon the nature of the cell, the structure of chromosomes, and the inter-reactions of single-celled organisms are presented in commemoration of the work of many investigators and the centenary of the establishment of "the cell theory of Schleiden and Schwann."

THE POISON TRAIL. The Story of Man's Constant Struggle Against His Most Insidious Enemy. By William F. Boos, M.D. Boston and New York: Hale, Cushman, and Flint, 1939. Price, $3.00.

Primitive peoples tipped their arrows with curare. Socrates drank hemlock under the observation of fellow philosophers who recorded the action of the poison for all time. Modern civil, military, and industrial life has increased rather than decreased the number of poisons to which mankind is exposed. Only by increase of knowledge of the action, detection, and control of poisons has mankind been able to decrease the poison risk to life.

A large portion of this volume will be interesting and understandable to the lay reader and may serve as a valuable antidote to the misapprehension created in the public mind by some newspaper headlines and the amazing crime, detective, and mystery literature of the present day.

However, the author is a physician and an eminent authority as a toxicologist. From his experience significant details of case histories, clinicopathologic findings, and court room procedures are presented to establish or disprove poisoning by atropine, arsenic, phenol, lead, benzol, cyanide, mercury, morphine, or carbon monoxide—to mention but a few of the poisons discussed. Food poisoning possibly attendant upon processing by canning or cold storage is probably the author's forte by virtue of years of investigative and subsequent consultant work in this special field, as chapters "Ptomain-Poisoning Fallacy" and "Bugbear of Botulism" bear witness. Specimen toxicologic reports are appended.

Not to be forgotten are pictures of physicians stumped by poisoning problems, the botanist suffering from mushroom poisoning, the chemist dying of phenol poisoning, and a group of addicts treated to a cocaine jag.

COMPLETE GUIDE FOR THE DEAFENED. By A. F. Niemoeller, A.B., M.A., B.S. New York: Harvest House, 1940. Price, $3.00.

"Rise above thine infirmity; and so conduct thy life that the world hath need of thee." This, the author's last line, quoted from the above-named Guide, epitomizes this informative volume addressed to the lay public or rather to the estimated 10 to 20 millions of the American public who suffer from partial impairment of hearing.

Chapters dealing with "Drugs and Hearing" and "Diet and Hearing" reveal a lack of critical viewpoint which medical training might give. A reader is left with the impression that much of the deafness in the world is due to the use of common drugs and many, including aspirin and insulin, are named. The author apparently accepts and passes on to his reader the statement that "defective hearing in children has been greatly improved by substitution in their diet of honey for white sugar, rye bread or corn meal for wheat foods, and dilute grape juice for milk" (!! Shades of Bernarr MacFadden). Generations of scientists would say, "What is the evidence?"

It should be said that the author encourages his readers to seek competent medical advice and brings to their attention the work of Alexander Graham Bell and more recently the Bell Telephone Laboratories, the Volta Bureau and Review, and the American Society for the Hard of Hearing.

THE EMPEROR'S ITCH. The Legend Concerning Napoleon's Affliction with Scabies. By Reuben Friedman, M.D., assistant professor of dermatology and syphilology, Temple University School of Medicine, Philadelphia. With 10 illustrations. New York: Froben Press, 1940. Price, $1.50.

Years have now passed since Napoleon dominated the European continent and scratched himself in his spare moments. Although thousands of volumes have been written about his conquests and régimes, practically nothing has gone down in the literature about his interminable aggravating and chronic pruritus. However, Dr. Friedman has stepped in and filled the breach in the history of this great man with a little volume on the subject of Bonaparte's itch. The author puts his head down and dives into a huge number of references, authoritative and legendary, poetic and prosaic, medical and nonmedical. He batters his way through a long string of contradictions and paradoxes and emerges triumphant with an unequivocal diagnosis. And well may he be triumphant, for this fact should for all time settle the question of "why Nappy itched."

Disappointing, however, is the conclusion that Na-

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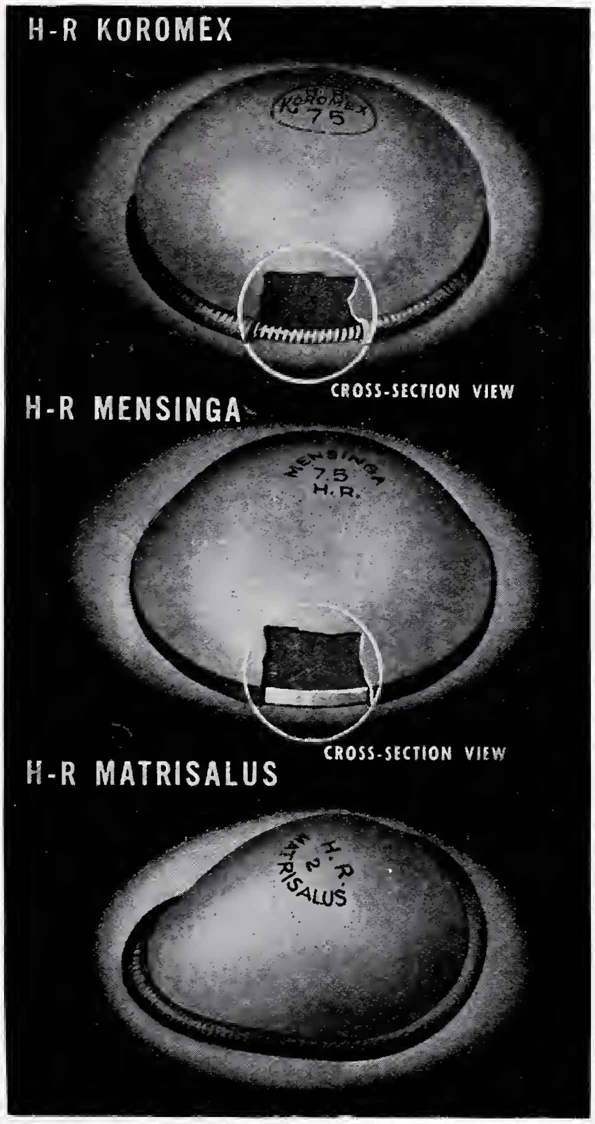

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Every precaution has been taken to insure accuracy in these advertisements and in this index, but there is no guarantee against errors or omissions.

poleon's hand inside of his coat was merely a mannerism, not a method of relief.

The reviewer is loath to divulge the final diagnosis made by Dr. Friedman; it would spoil all the fun to be derived from reading this humorous yet serious little treatise.

It is fascinating to dwell on the possible events which might have occurred and the fate which might have befallen Europe if Napoleon had been an entirely well man. Perhaps it was his pruritus which led to his defeat by the Russians and his subsequent failure. Perhaps Napoleon scratched during Waterloo and itched so severely during his return from Helena that he had to stop on the way and have his back scratched several times.

Perhaps—well, read it for yourself and then let your imagination run loose after it has been whetted by a dermatologist's story of Napoleon's life.

METHODS FOR DIAGNOSTIC BACTERIOLOGY. A complete guide for the isolation and identification of pathogenic bacteria for medical bacteriology laboratories. By Isabelle G. Schaub, A.B., assistant in bacteriology, Department of Pathology and Bacteriology, The Johns Hopkins University School of Medicine, and M. Kathleen Foley, A.B., bacteriologist in charge of the Diagnostic Clinic, The Johns Hopkins Hospital, Baltimore. St. Louis: The C. V. Mosby Company, 1940. Price, $3.00.

This is a manual of bacteriologic methods containing an outline of procedures essential to the identification of pathogenic micro-organisms. Interleaved for notetaking, this volume is designed for student use. However, the presentation is not elementary and absence of illustrations and explanatory material presuppose previous instruction, supplemental reading, or use in conjunction with laboratory demonstrations.

Staining formulas and technics, culture media and methods, together with serologic methods, are given as applicable to both clinical and necropsy material with emphasis upon differential characteristics. Recent clinical advances are reflected in attention given to classification of streptococci, typing of pneumococci including the Quellung reaction, a combination of procedures helpful in establishing or disproving a diagnosis of brucellosis, and allowances for technologic alterations when drugs of the sulfanilamide group are being administered.

Since this is a manual which has proven useful in student instruction in one of the foremost teaching hospitals, it will probably find its way into other hospitals engaged in technician training with benefit.

TABER'S CYCLOPEDIC MEDICAL DICTIONARY. Including a digest of medical subjects—medicine, surgery, nursing, dietetics, and physical therapy. By Clarence Wilbur Taber and 14 associates. 1488 pages with 273 illustrations. Philadelphia: F. A. Davis Company, 1940. Cloth, thumb-indexed, $3.00; plain, $2.50.

This is the only medical dictionary, large or small, written (not compiled) by a corps of medical specialists. This work is as much a dictionary of medical subjects as it is a comprehensive medical lexicon. With its 50,000 words, including the latest terms and drugs, this work will answer the requirements of all professional groups concerned with all branches of medicine.

Admittedly entering a new field, the participants in the discussion of "Peripheral Vascular Diseases" (see page 982) afford stimulating disagreements as to numerous procedures. Be sure to read it.

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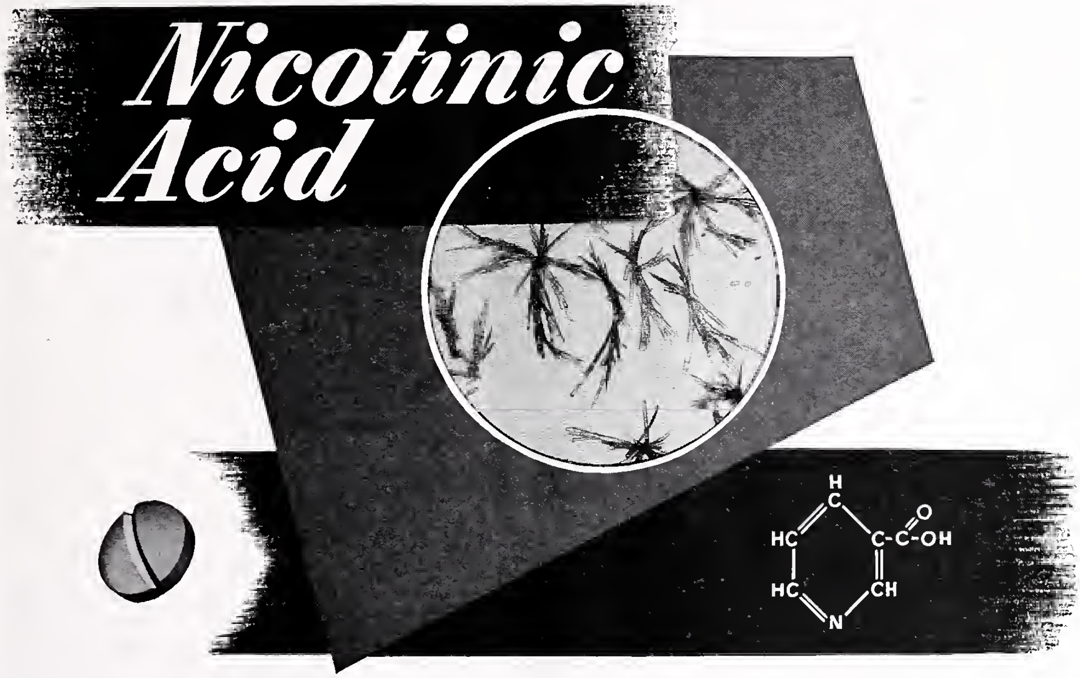

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LETTERS

Buried and Unread

Gentlemen:

I have the idea that most of the scientific material in the county society reports is buried and unread. I suggest that short headings be inserted in bold face type as in the Montgomery County Society report for Apr. 2.

Wallace W. Dill, M.D.,
Norristown, Pa.

Dr. Dill's point is well taken. Recently the editorial conferees of PMJ have attempted to call special attention to the wealth of scientific material contained in the county society reports. This was done first by the use of subheadings like those mentioned by Dr. Dill. In the May issue attention was further called to outstanding county society reports by the use of boxed editorial references scattered throughout the Journal.

PMJ thanks Dr. Dill for his suggestion. Yours will be just as welcome.—The Editors.

Possible Remedy for Australian Physician Shortage

Gentlemen:

The Minister for the Army, Percy Spender, announced that on May 2 the Australian Central Medical Co-ordination Committee recommended that Australian universities* shorten their medical courses.

Mr. Spender says that Britain is asking that more doctors be sent to Britain and to India immediately, but a review of the Australian position indicates that it is inadvisable to release doctors. He explained that 6500 doctors were registered, but excluding those over age, those working in essential services, those unfit, and those on active services, there is now only one doctor for every 3500 people.

David W. Bailey,
American Representative,
Australian Associated Press,
New York, N. Y.

Thomas McCrae Award

Gentlemen:

The readers of the Journal may be interested in knowing that the first annual Thomas McCrae Award of $100 was granted to Robert F. Norris, M.D., and Alexander Rush, M.D., on Tuesday, Apr. 22, for the best publication in 1940 by the younger members of the medical staff of the Pennsylvania Hospital, Philadelphia.

The award, honoring Dr. McCrae, late professor of medicine at the Jefferson Medical College and late chief of one of the medical services at the Pennsylvania Hospital, is to be granted annually to the younger men of

---

* See editorial, "A Generation to Recoup," page 1171.

Q. *Can latent avitaminoses be prevented by diet?*

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Dr. Henry A. Christian, Hersey professor of the theory and practice of physic, emeritus, Harvard University, addressed the audience on "Scholarship in Medicine."

JOHN T. BAUER, M.D., *Director,*
Ayer Clinical Laboratory,
Pennsylvania Hospital.

TANNIC ACID AS A CURE FOR POISON IVY

A suggestion that tannic acid may cure poison ivy inflammation was made on May 16 by the United States Public Health Service, at the start of the "poison ivy season."

Tests at the close of last season on a limited number of persons were most encouraging. Public Health Service scientists are anxious that physicians give tannic acid a trial this season and either confirm or disprove its value. The treatment should not be attempted by laymen.

A 10 per cent solution of the tannic acid in water was applied to the ivy inflammation after the area had been cleansed with alcohol. Itching and discomfort stopped within 1 or 2 days after beginning of treatment and all symptoms disappeared at the end of a week.

Also developed by the Public Health Service is an oxident cream containing 10 per cent sodium perborate which has been effective in preventing ivy poisoning. The cream is rubbed into the skin before exposure to poison ivy and allowed to remain during exposure. It must be washed off with soap and water and renewed every 4 hours.

The tannic acid and the protective ointment are also effective against sumac poisoning.

Both poison ivy and sumac poison are most dangerous during spring and summer when the sap is running. The ivy grows as a woody perennial vine, low erect bushes, or trailing shrubs. It is found in woods or in the open, in moist or dry locations, and is particularly abundant along fence rows and paths. It often climbs posts and trees. The leaves are always divided into 3 leaflets, usually with notched and indented margins. They are dark green on the upper surface and lighter underneath.

Poison sumac is a bush or tree with smooth grayish bark on the trunk and older branches and reddish-brown young branches. The leaflets are an elongated oval shape, velvety and bright orange when they first unfold in the spring. During the summer they are dark green and glossy on the upper surface, with prominent scarlet midribs, lighter green underneath. Early in the autumn they turn to brilliant red, orange, and russet shades. Poison sumac grows in moist ground, usually in swamps or along streams and ponds.

Symptoms of ivy poisoning appear from a few hours to 5 days or longer after exposure. An itching or burning and reddening are first noticed. The eruption takes the form of tiny separate blisters which may run together into larger pus-filled sores. As the eruption dries, a crust or scab forms. After the inflammation subsides, the skin peels, leaving a layer of new skin. There is nearly always some swelling of the parts involved, but this usually stops as rapidly as it appears.—*United States Public Health Service.*

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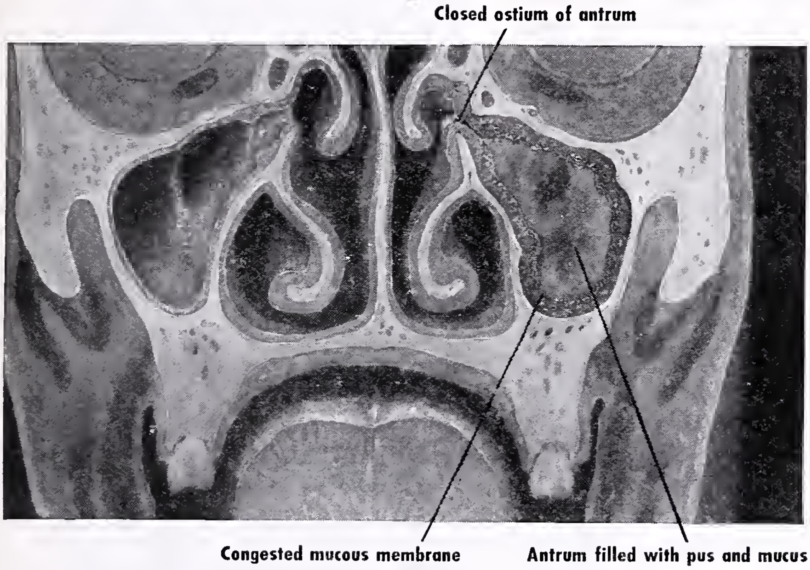
PATHOLOGY OF THE UPPER RESPIRATORY TRACT: 2



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JELLY

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Monroe	Moses J. Leitner, Bushkill	Harold B. Flagler, Stroudsburg	4 a year
Montgomery	George R. Irwin, Bridgeport	Walter J. Stein, Ardmore	*Monthly
Montour	Vincent J. Cassone, Danville	Sydney J. Hawley, Danville	Monthly
Northampton	Arthur B. Hamilton, Bethlehem	Dudley P. Walker, Bethlehem	*Monthly
Northumberland	George M. Simmonds, Shamokin	Mark K. Gass, Sunbury	*Monthly
Perry	William H Gelnett, Millerstown	Catherine Johnston, New Bloomfield	Bimonthly
Philadelphia	Edward L. Bortz, Philadelphia	Henry G. Munson, Philadelphia	*Monthly
Potter	Bernard S. Bretherick, Roulette	J. Irving Bentley, Coudersport	Bimonthly
Schuylkill	Peter B. Mulligan, Ashland	Charles V. Hogan, Pottsville	Monthly
Somerset	Bradley H. Hoke, Jr., Salisbury	Bradley H. Hoke, Meyersdale	Bimonthly
Susquehanna	James J. Grace, Montrose	Abram E. Snyder, New Milford	4 a year
Tioga	Charles W. Sheldon, Wellsboro	Robert D. Leonard, Tioga	Monthly
Venango	Cecil H. Hodgkinson, Oil City	Norman K. Beals, Franklin	Monthly
Warren	Tom K. Larson, Warren	Hilding A. Bengs, Warren	Monthly
Washington	George L. McKee, Burgettstown	Albert E. Thompson, Washington	*Monthly
Wayne-Pike	Hobart N. Owens, Hawley	H. R. Patton, Damascus	Bimonthly
Westmoreland	Paul G. McKelvey, Greensburg	Richard S. Cole, Greensburg	*Monthly
Wyoming	Van C. Decker, Nicholson	Arthur B. Davenport, Tunkhannock	Bimonthly
York	Herman A. Gailey, York	H. Malcolm Read, York	*Semimonthly

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* Except July and August.

† Acting for Secretaries Hoffman, Benz, and Klopp, who are in military service.

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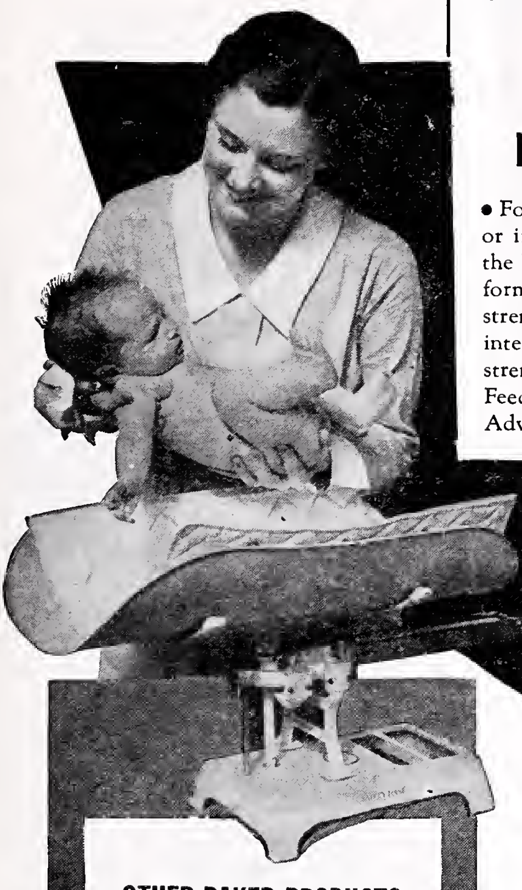

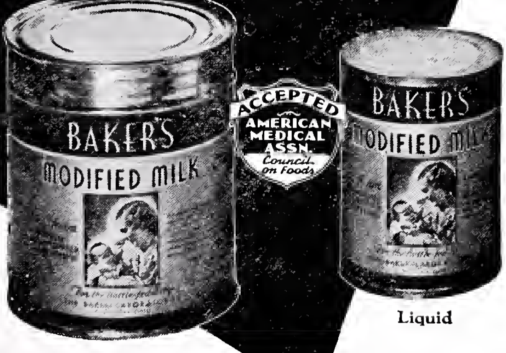

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Congenital Anomalies (Nevi) and Their Relationship to Cancer and Melanoma

EUGENE F. TRAUB, M.D.
New York, N. Y.

FROM the time my interest was first centered on the question of nevi and congenital anomalies in general, I have been impressed by the almost hopelessly confused nomenclature which has so materially retarded our progress in this field. In order to orient myself I attempted several classifications, in each of which most of the old names were retained because this seemed necessary. I have become convinced, however, that retention of most of the old confusing and unnecessary terms simply means holding on to many obsolete ideas. My recommendation is that only the simplest descriptives be used as suggested in the following scheme:

I. *Vascular nevi:**

1. Nevus vasculosus (hyperplasia of blood vessels).
    - a. Flat (capillary) — example: nevus araneus or nevus flammeus.
    - b. Raised (capillary)—example: angioma.
    - c. Deep (capillary)—example: cavernous angioma.
2. Nevus lymphangiectodes.
3. Nevus vasculosus et lymphangiectodes.
4. Heterogeneous vascular nevus—example: combination of the above types in the same mark.

II. *Pigmented, hairy, and/or warty nevi:*

1. Intra-epidermal nevus (no nevus cells). May terminate in basal cell or squamous cell epithelioma.

    Possible examples:
    - a. Nevus verrucosus (hard). May also present some hairs or pigmentation, and frequently has a linear configuration.
    - b. Verruca senilis or keratoma senile. Generally becomes basal cell epithelioma if a change takes place at all.
    - c. Dermatosis papulosa nigra.
2. Epidermo-dermal nevus (junction type nevus). Nevus cells present. May terminate in melanoma (nevocarcinoma).

    Example:
    - a. Nevus pigmentosus. May rarely also present a few fine or sparse coarse hairs or have a *soft* warty surface.
3. Intradermal nevus (nevus cells present). Benign always, if pure type.

    Example:
    - a. Nevus pigmentosus et verrucosus et pilosus.† Always soft and warty in character—not hard.
4. Blue nevus (cells of different shape than in preceding types). May rarely terminate as melanosarcoma.
5. Heterogeneous pigmented nevus or combination or mixture of two or more of the above types (nevus cells present). May terminate as basal cell or squamous cell epithelioma, as melanoma or melanosarcoma.

III. *Nevi of special tissue:*

1. Glandular { sudoriparous gland nevus. / sebaceous nevus.
2. Connective tissue nevus.
3. Fat tissue nevus—nevus lipomatodes.
4. Nerve nevus.
5. Heterogeneous type.

Read before the Section on Dermatology of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

* The designation "nevus" means simply a "mark," hence does not commit one to controversial ideas from the viewpoint of either etiology or pathology.

† According to the character and the preponderance of various associated cutaneous changes, several descriptive designations are in common use: pigmented and hairy; pigmented and warty; pigmented, hairy, and warty.

Terms Used

Briefly, nevus vasculosus is a satisfactory designation for all types of blood vessel nevi. One only needs to say *"a flat vascular" nevus* when referring to our old nevus flammeus or port-wine mark; or *"raised vascular"* nevus when we mean an angioma, hemangioma, strawberry or raspberry mark; and *"deep vascular"* nevus would be the former cavernous angioma or hamartoma. These are easy to remember and are not as confusing.

Pigmented nevus (nevus pigmentosus) would include all marks clinically showing pigment regardless of their size or depth of color (only blue nevi excluded). Thus lentigines, nevi spili, etc., may be included--the accompanying description being sufficient to identify it to the reader. Such a scheme is better than the use of the term lentigo, which is obviously not understood by the majority. The color of the nevus is dependent on many factors other than the actual amount of melanin present in the lesion. A lesion may appear almost flesh-colored and yet apparently contain as much melanin as another similar mark that clinically appears much darker (browner) in color.

Verrucous nevus (nevus verrucosus): One must immediately state whether a warty nevus is *hard* or *soft*. That, together with the balance of the clinical description, is usually enough to catalogue it. Usually nevi with nevus cells are "soft" while the intra-epithelial nevi with their changes all in the epidermis are hard.

Hairy nevus (nevus pilosus): The presence of hair is usually an accompaniment of other nevi, although a pure hairy nevus may rarely be found.

Another reason justifying the simplified terminology is the fact that histologically many of the marks, clinically given widely different names, are indistinguishable. This will be explained in greater detail later. Suffice it to say at this time that nevus pigmentosus, nevus spilus, some lentigo, and lentigo maligna, etc., may present an identical histologic appearance.

Little stress is usually laid upon the diagnostic difficulties that may occur when dealing with nevi. A few of the errors that I have run across are the following: Mistaken for an intradermal nevus were fibrosarcoma, fibroma, tricho-epithelioma, basal cell epithelioma, a chronic inflammatory nodule, histiocytoma cutis, intra-epithelial nevus, and junction nevus; mistaken for a junction nevus or melanoma were a cavernous angioma, pyogenic granuloma, blue nevus, pigmented basal cell epithelioma, Kaposi sarcoma, angiosarcoma, syringadenomatous papilliferous nevus, hydrocystoma, tinea nail (bed), lupus vulgaris, histiocytoma cutis, intradermal nevus, and intra-epithelial nevus. This rather formidable list is indicative of the difficulties that frequently occur even in a skin clinic. This is not so surprising, however, when one considers how seldom biopsies are performed and microscopic studies carried out on nevi.

Under the heading "intra-epidermal nevi" (which consist of marks that lie entirely within the epidermis and are formed by proliferation of a mixture of normal prickle and basal cell type epithelial cells) may be grouped a number of clinical entities. As nevus cells are not present in this type (it must be recalled that the use of the term nevus simply refers to a "mark"), some criticism of anything but the hard warty nevus (nevus verrucosus) that is placed in this group is likely. However, as the essential changes are confined to the epidermis, a broad interpretation sometimes makes it difficult to exclude the following other (congenital?) anomalies: the verruca senilis (keratoma senile, seborrheic keratosis), dermatosis papulosa nigra, the so-called benign pigmented epithelial nevus of Bloch, and possibly others. Sometimes a hard warty nevus may appear quite pigmented or may contain hair follicles—the clinical designation in such a case might properly be nevus pigmentosus et verrucosus or nevus verrucosus et pilosus and so on, but it must be remembered that these terms are as a rule reserved for the classical intradermal type which is called nevus pigmentosus et verrucosus et pilosus clinically. While it is admitted that in some cases, because of concomitant changes, verruca senilis or dermatosis papulosa nigra may be recognized and should be classified as such microscopically, proof that they may be labeled intra-epithelial nevi is supplied by several cases in the present series in which this was done by very able skin pathologists.

Since the changes occur only in the epidermis, these lesions "fairly sit" on the skin and have practically no depth. The amount of pigment present may vary considerably in different lesions. The marks not infrequently assume a linear configuration which, together with the history of having been present since infancy, makes a clinical or microscopic diagnosis of intra-epithelial nevus possible. Rarely do these lesions terminate in cancer, but when they do, the hard warty nevus may become a prickle cell epithelioma while the verruca senilis is more apt to change to a basal cell epithelioma. Because of their superficial character, already mentioned, these lesions usually can be readily removed with very superficial desiccation followed by curettement with practically no resultant scarring. Radiation is unwise (if not actually contraindicated) in any of the marks of this group except the verruca senilis, and there it is usually unnecessary if desiccation has been thoroughly done.

It is about the epidermo-dermal (junction) type that most interest centers, because this lesion is believed to be the forerunner of or the potentially malignant melanoma. While we have learned a great deal about these lesions in the past few years, much must still be determined. We know that marks present from birth may show a typical junction type picture or that smooth pigmented marks that suddenly appear later in life may reveal a histologic picture indistinguishable from the other in the light of present knowledge. We know further that those lesions which appear later in life, and which may increase in size fairly rapidly, offer a worse prognosis if malignant melanoma develops (this occurs infrequently when one considers the large number of such marks). There may be, therefore, some fundamental difference between these marks that cannot or have not yet been recognized either clinically or microscopically. To add to our difficulty is the fact that not all of the pigmented marks that look practically alike clinically prove to be of the same type histologically. Furthermore, nevi are often not purely of one type and as a result a number of different combinations and sequelae are possible.

From a clinical standpoint, transitions between the so-called lentigines, soft moles, and cellular nevi or molluscoid nevi have been stressed by Masson, McCarthy,[1] Gans, and others. It has been shown by Kissmeyer[2] that a fairly definite relationship exists between the various age levels and the appearance of some of the types of nevi. His figures show that the number of individuals with lentigines and nevi spili do not increase after the tenth year, whereas the number with cellular (infiltrierte) and molluscoid nevi increases even after the tenth and steadily up to the twenty-fifth year. This complicates the problem because it brings up the question of possible transitions in type between the epidermo-dermal and intradermal nevi. In the marks studied so far, there have been a number that proved difficult to catalogue on microscopic appearances alone. When submitted to several experts, differences of opinion arose as to whether the nevus was an intradermal or epidermo-dermal one. Some of these confusing lesions showed a complete separation of nevus cells from the epidermis (no activity at the junction), but nevertheless the cytology of the cells in the cutis resembled that of a junction nevus. It seemed to me that some of these may have represented true combinations of the two types in the one growth. But, while it is hard to understand the exact significance of these occasional atypical lesions, it is probably doubtful that they represent examples of microscopic transition in type. In other words, the evidence so far collected seems to indicate that, microscopically, nevi remain true to their original type.

The mark that clinically is most apt to be the junction type is the relatively flat or slightly raised smooth pigmented mark that is devoid of coarse hairs. Hairs are usually entirely absent, but fine (lanugo) hairs or occasional coarse sparse hairs may be observed both clinically and histologically. As a rule, the hairs are never a striking feature, as most of these marks are described as devoid of hairs. The surface is usually smooth, but as the lesions get older or take on added growth, they may develop an irregular or even soft verrucous or fungating surface. The size may vary from a tiny mark no larger than a pinhead to one of considerable dimension, but the largest marks that I have so far encountered have not been over 3 to 4 centimeters in diameter and the majority do not exceed 1 to 3 centimeters in diameter. They are found most commonly on the extremities and the face—less frequently on the trunk—but they may occur anywhere. On the trunk the most frequent location seems to be the upper back (shoulders) and next the abdomen.

It has generally been taught that the blue black or slate blue or black mole is the dangerous lesion. There is no doubt but that some of the junction nevi conform to this conception, but I have found that the majority of the marks that are "slate blue or black" turn out to be the innocent blue nevi, while the lesions varying from a light brown to a brownish black color are more often the junction type. The color, however, seems to be one of the least reliable guides. Only if a decided change in color occurs, i. e., from brown to a dark black, etc., may some significance be attached to it. Marks fitting this description may be present from birth, but a great many of them appear suddenly later in life and the duration of those we have seen has varied from less than a month upward. There is no limit to the number that may be found on one individual.

To sum up, therefore, the classical junction type lesion is most commonly found on the extremities, face, or trunk, it may vary in color from a light "café au lait" to a dark brownish black, it is usually devoid of coarse hair, and generally smooth-surfaced, less often *soft* warty. It may appear at any time in life or have been present since birth. It is usually of small size, generally not over 2 to 3 centimeters in diameter, and, most important, it must be noted whether the mark is stationary in size or growing.

Microscopically, junction nevi are characterized by cellular activity at the epidermo-dermal junction as opposed to changes occurring solely in the epidermis (in the intra-epithelial nevi) or wholly in the cutis (in the intradermal nevi). Not only is the activity at the junction but a peculiar segregation or grouping of the cells occurs and clear spaces are formed about them. This formation of *theques* and the "abtrofung" or trickling off of the epidermal cells is found both in malignant melanomas as well as in apparently innocent pigmented nevi. In the latter, theque formation was said not to be as pronounced, so that the finding of several theques in the same field was thought to be of possible serious significance, but this is not necessarily the case unless other changes indicative of an active lesion are present. One must examine serial sections and note cytology carefully before deciding a doubtful lesion is or is not the junction type. Frequently, it is difficult to decide whether the changes are not those of an early malignant melanoma rather than merely junction type nevus.

In the ordinary junction nevus, "abtrofung" into the cutis evokes no reaction, but when these nevi change to melanoma, considerable infiltration of small lymphocytes and plasma cells, which seem to try to wall off the invading cells, takes place. The cells become more anaplastic in character and show variations in size and shape. The connective tissue is also stimulated and tends to form almost complete capsules about localized groups of the rapidly proliferating nevus cells. As the malignant process develops, breaking up and necrosis of the nevus cells results in liberation of masses of pigment taken up by the chromatophores. The amount of pigment in the lesions, however, is variable, as is the finding of mitotic figures looked upon by some as definitely signalizing malignant change. As the tumor mass increases in size, the overlying epidermis is thinned and pressure may cause erosion or ulceration. This has already been discussed fully and criteria have been given.[3]

Fortunately, the intradermal nevus seems to be the most common of all the nevi. The so-called "common mole" seen almost exclusively on the face, which is the most common example of the group, is characterized by a soft, pigmented, smooth warty elevation that often contains a number of hairs. Other than the "common mole," the pigmented, hairy, and soft warty nevi may be found on the face, trunk, and less often on the extremities, especially the lower, where they are comparatively rare. Microscopically, no changes are noted in the epidermis and the nevus cells lie in the cutis in nests, strands, or bands at a distance from the epidermis, leaving a free zone or band between them. While it is admittedly difficult and inadvisable to make positive statements in this regard, it is nevertheless my belief that the *pure* intradermal nevus is an innocent lesion and only rarely if ever becomes a nevocarcinoma and never terminates as a basal or squamous cell epithelioma. These lesions are removed only for cosmetic purposes, and as the base of the mark need not be completely destroyed, no trace either of nevus or a scar need be left. I find it more satisfactory to destroy them in as few treatments as possible (one or two), and this of course avoids prolonged irritation which might prove dangerous if dealing with a mixed-type lesion. This is particularly true, as biopsies are rarely taken when a good cosmetic result is desired.

The blue nevus, which was first recognized by Tièche[4] in 1906 (although such lesions had been previously described under other names), is a fairly common mark despite the little attention that has been paid to it. Undoubtedly it has been and still is being frequently mistaken for an early malignant melanoma (slate black mole). One must look for these lesions, as most persons having noticed the mark since birth rarely seek treatment as they correctly believe the nevus to be benign. Several blue nevi may be present on the same patient or nevi of other types may be found on the same individual or even in the same lesion. Blue nevi occur most frequently over the same areas on which melanomas are most commonly found, namely, the head (especially the face) and the extremities, but contrary to melanomas they are more frequent on the upper than on the lower extremities.

Blue nevi are usually sharply circumscribed, round or oval, slightly elevated papules or nodules that vary in size from 0.2 to 0.3 centimeters to a maximum that rarely exceeds 1.5 to 2 centimeters. (In one of the youngest cases of blue nevus in this series, the patient was 4 years of age and the growth, which had been present on the buttock since birth, had steadily increased until at present it was over 10 times its original size.) Their consistency is soft, but they are firm to the touch. The color may be striking, varying from a speckled or mottled blue, to a blue black, blue gray, steel blue, or black. Even lighter or darker shades of brown are sometimes possible.

Microscopically, the blue nevus is composed of spindle-shaped melanoblasts grouped in irregular masses in the lower two-thirds of the cutis and separated from the epidermis by intervening normal cutis (may extend slightly higher in cutis). The depth and number of these melanoblasts are a factor in determining the color of the nevus. According to Montgomery, the amount of pigment in the epidermis varies. It may be decreased directly over the nevus, but ordinarily does not reveal an increase. In one of my cases considerable pigment was noted in the basal cell layer of the epidermis, but perhaps this was normal for that particular individual. The typically elongated spindle-shaped cells of the blue nevus, with their long bipolar or dendritic processes, are easily differentiated from the ordinary oval nevus cells which are usually arranged in bands, nests, or strands. Blue nevi are essentially benign lesions (Miescher, Jadassohn, Montgomery,[5] Traub and Keil), the change to melanosarcoma being exceedingly rare. While a number of such cases[9] are recorded in the literature as having become melanosarcomas, Montgomery[5] questions the validity of 8 of them, accepting only one case, that of Stout.[6] In this case a melanosarcoma arose from a blue nevus on the dorsum of the foot.

The fifth group—the heterogeneous or mixed nevus—consists of a combination of 2 or more of the first 4 types. Marks that fall into this group are probably responsible for the exceptional cases that seem clinically to belong to one type and behave like another. For example, a combination intra-epithelial and intradermal nevus might terminate as an epithelioma, violating our concept that the pure intradermal nevus does not undergo such a change. Even a careful microscopic examination after such a change had occurred might not produce evidence of the preexistence of the responsible intra-epithelial nevus. Similarly, I found a number of combinations of intradermal and junction type nevi. Such lesions might go the way of the junction type, again apparently providing an exception to the rule (especially if the lesion clinically resembled an intradermal nevus). A blue nevus may be combined with any of the other types, one of my most recent cases having been combined with an intradermal nevus.

The cases comprising this series were selected particularly with a view to choosing exceptional or combination types insofar as this might clinically be possible. Percentage occurrence of such examples is impossible to state, but I believe that while combinations are *fairly frequent,* as compared to the *total number* of nevi that run true to type, such combinations are relatively *rare.* It is only fair to say that, clinically, it is more often impossible to recognize combination types than otherwise. For this reason I am practicing excision as the method of treatment in as many of these lesions as is feasible. The final result, too, is often just as pleasing as may be obtained from so-called dermatologic procedures such as electrolysis, solid ice (CO_2 snow), desiccation, etc., and it carries the further advantage of microscopic assistance in properly cataloguing the mark. The more heterogeneous types that are thoroughly studied, the better we will be able to determine the value and accuracy of the simplified classification just proposed.

How shall one decide whether a given mark should be removed or left untreated? It can be stated with certainty at the onset that all nevi may be safely removed and that proper removal is less hazardous than to permit a potentially dangerous lesion to remain. As previously stated, intra-epithelial and intradermal nevi are removed without deep destruction to the base; in fact, with intradermal nevi, to obtain the best cosmetic result the base is always left and the mark rarely shows any tendency to regrowth. Blue nevi need not be widely excised to insure a safe result. It is only with junction nevi that the problem of whether to leave or remove the mark arises, and further, if removal is decided upon, how extensive should this be done? I do not believe in allowing a suspicious or apparently dangerous mark to remain "under observation." If such suspicious mark is innocent, certainly no harm can come from excision, while if it is a melanoma, valuable time is lost and the opportunity for "early" removal and possible cure may be thrown away if it is not excised at once for microscopic study.

Suppose, however, we feel sure that we are dealing with an innocent junction nevus, and as great numbers of these potential melanomas are to be found, what should we advise? I believe that these lesions, if touched at all, should be thoroughly destroyed, but extremely wide excisions as practiced for melanomas are unnecessary. All junction nevi on the hands and feet or on other areas where they are subject to considerable trauma or danger of trauma are best removed prophylactically. My chief reasons for this advice are that (1) junction nevi may be safely removed without unduly wide excision, and (2) the time elapsed between transition from benign to malignant lesion is so short, frequently not more than a few weeks or months, that when the patient becomes aware of a change in the character of his "mark" it may be too late, metastasis frequently taking place simultaneously with earliest changes noted in the primary lesion.

As the vascular nevi (group I) so rarely change to metastatic tumors, most attention has been given to the pigmented, hairy, and warty nevi—group II.

The special tissue nevi comprising group III are all relatively rare, and while some may terminate in cancer, none of the few cases in my series showed evidence of any such change. I did, however, find a number of sebaceous and connective tissue nevi combined with intradermal and junction type nevi.

Material Used

The material used for this study consisted of nearly 400 specimens, the majority of which were taken from patients personally seen and photographed for record purposes, and the balance comprised slides, photographs, and descriptions kindly supplied by Drs. Montgomery and O'Leary, Finnerud, Cole and Driver, and others. The attempt was made to obtain as many early lesions and nevi in various stages of development as possible; frequently, 5 or more sections were obtained from one patient. Many varied types or combinations of nevi may and often are found on the same patient, even in the same lesions. One finds, too, that on microscopic examination of a pigmented spot, no matter how early, small, or superficial it may be, it may prove to be a much more advanced stage in development of its respective type than could have been suspected clinically. The presence or absence of nevus cells cannot invariably be predicted clinically so that a microscopic examination is sometimes necessary to determine this fact positively. Naturally, histologic study will also assist materially in classifying the mark. Becker,[7] in speaking of differentiating various types of pigmented marks, stated that when in doubt, microscopic differentiation presented no difficulty and that biopsy always identified elevated nevi by the presence of nevus cells. Unfortunately, this is not invariably true, particularly if serial sections are not available. As already pointed out, it is sometimes difficult to decide on microscopic examination the exact classification of the mark or whether it is benign or a malignant melanoma. All of my doubtful slides were checked by at least two skin pathologists, giving rise, not infrequently, to two or more different opinions on the same section.

Because developmental and degenerative processes bring about clinical changes in the appearance of nevi, one cannot label a given lesion too accurately by inspection alone, and for this reason I believe we should drop terms like lentigo, nevus spilus, cellular or mulluscoid nevus and substitute the simple but nevertheless far more accurate terminology proposed in the present classification. This seems particularly vital since no less an expert than Montgomery,[8] in his recent article on pigmented nevi, in commenting on the classification of Traub and Keil, registered some confusion because of terminology. His description of lentigo maligna—"this is characterized histologically by nests of large irregularly shaped, heavily pigmented nevus cells lying within, or just adjacent to the epidermis"—is that of the epidermo-dermal nevus (junction type). As the lentigo maligna, said to appear only later in life, is indistinguishable microscopically from the majority of the smooth, pigmented, nonhairy, and nonwarty nevi (nevus pigmentosus) present since birth, the advantage or value in retaining the name lentigo maligna is decidedly questionable.

Montgomery[9] also *had* our experience in finding, and I quote, "a small group of nevi in which the pathologic diagnosis of early melanoepithelioma had been made by one or more of the pathologists at the Mayo Clinic or elsewhere. None of the patients which we were able to follow up had recurrence of the lesion from 3 to 12 years after simple excision. Further evidence that histologic changes may not represent clinically malignant changes arises from the fact that in several clinically benign pigmented nevi, removed purely for cosmetic purposes, the same malignant-looking nests of nevus cells were seen in the epidermis." Many of the clinically innocent marks examined in this study, as well as in the group previously reported,[3] gave rise to much difference of opinion histologically as to whether we were dealing with a malignant melanoma or epidermo-dermal type nevus. While the epidermo-dermal type nevus is the potentially malignant melanoma, it is found so frequently (many individuals having literally hundreds of these marks) that it is obviously impossible to remove all such lesions prophylactically. Only those in dangerous locations (areas easily or frequently traumatized) or suspicious pigmented marks appearing later in life need be excised. Trauma is recognized by most observers as a possible factor in apparently changing over the course of an innocent lesion to a malignant one, but I am certain that other circumstances not understood at present must also play an important rôle in melanoma production.

From a review of the literature and a study of cases personally observed, the conclusion is inescapable that melanoma is such a dread disease because the majority of the patients do not receive radical treatment early enough. Often this is not the fault of either the patient or his physician. The symptoms that have so long been stressed as "early," namely, bleeding, ulceration, sudden increase in growth or pigmentation, etc., must unfortunately in many instances be looked upon as "late" because of the rapid metastasis that frequently parallels these changes. Several of my cases illustrate this point: A pigmented lesion on a 24-year-old patient's right great toe, which had been present since birth, suddenly became painful and discharged blood, pus, and a black secretion during the week before visiting the clinic. Metastatic inguinal nodes were removed 11 days after excision of the primary tumor. In a 48-year-old woman who had a pigmented lesion on the right forearm present for 8 years, it was noted that it had enlarged in the 2 months prior to admission. Less than 2 years after wide removal and radiation of this primary melanoma, the patient died of general metastatic melanoma. A 47-year-old man had a dark, smooth, nonhairy, nonwarty lesion on his left shoulder for 2 years. Only during the 3 months prior to his admission had changes such as increase in size and occasional bleeding been noted. The tumor which was not over 2 centimeters in diameter was widely excised with the electric cutting current. Some 13 to 14 months later a large node was dissected from the left axilla and found to be metastatic melanoma. Shortly afterward, general metastasis became apparent and the patient failed rapidly. All this, despite the fact that at the time of the original removal a chest plate was negative and no palpable nodes were found.

Innumerable similar examples might be quoted to justify the premise that all such lesions should be removed *before* any symptoms occur. Unfortunately, a sweeping recommendation of this kind is impractical and could not be carried out. Nor is such a drastic course necessary if we continue to increase our knowledge of the lesions from which melanomas are believed to arise. According to most authors, melanomas have arisen from pigmented nevi, "lentigo maligna" (a term that does not seem to add to our knowledge as it simply refers to a pigmented spot in which a melanoma develops), or from apparently normal skin (also the so-called implantation melanomas). A great many individuals have tiny smooth pigmented nevi on their feet, between the toes, etc., of which they are unaware until their attention is drawn to them, as I have often done in a routine examination of the feet.

While no proof can be produced at this time that would deny the origin of melanomas from normal skin, it is my opinion that they arise chiefly, if not entirely, from smooth pigmented, usually nonhairy and, if warty, soft warty marks on the skin. One point that apparently has caused some confusion is the fact that some melanomas arise from (1) marks (nevi) present since birth and (2) marks that have appeared suddenly or gradually at some time later in life. We all know that many nevi do not appear until puberty or often even much later in life (the climacteric). These marks appear to be similar microscopically. There seems to be some difference, however, in their prognosis. Those appearing later in life offer a definitely more serious outlook when the transition to melanoma has occurred. The melanomas from marks present since birth, on the other hand, are often successfully treated and 5-year cures are far more likely in this group. Unfortunately, it seems that melanoma arises more often from those pigmented marks appearing after birth later in life (substantiated by the number so far encountered in my series).

Almost all smooth, pigmented lesions on the lower extremities particularly, although this may also be true of the upper extremities, are apt to be junction type nevi. The pure intradermal mole in my experience is generally found only on the face and occasionally on the upper part of the trunk. I have been able to collect only one or two examples of intradermal nevi that were on the lower extremities. Thus far, none of the marks I have removed for diagnostic study, regardless of the size of excision, have later given rise to a tumor of malignant character or metastasis to nodes or to other tissue. This proves that the junction nevus is a benign lesion. However, it is the one lesion that should not in my opinion be treated with repeated (CO_2 snow) solid ice applications or with frequently repeated desiccation.

Summary and Conclusions

1. In order to eliminate confusion, a simplified terminology and classification is suggested

and it is advised that many valueless names be dropped.

2. The division of pigmented nevi into 5 groups is of great assistance in compiling definite data about these misunderstood growths. Especially in understanding possible dangerous sequelae it is of great value.

3. Most of the pigmented nevi fit readily into one of the first 4 groups. A relatively small percentage present difficulty in cataloguing and a small number of mixed or combination types occur. As experience is gained, probably some of these difficulties can be eliminated.

4. The epidermo-dermal nevus is the forerunner of the melanoma and is described in detail. In the past, melanomas that were thought to have arisen from normal skin in all probability arose from a junction nevus that had suddenly appeared. For this reason junction nevi appearing later in life should be looked upon with particular suspicion.

5. Prophylactic removal of junction nevi is advised, particularly under the following conditions:

a. Those appearing suddenly later in life.

b. Those occurring in areas particularly subjected to trauma, as hands or feet, etc.

c. Borderline lesions which cannot be readily kept under *close* observation.

6. Because of the *short interval* between the time the patient or physician notices usual signs and symptoms regarded as "early" and metastasis, these criteria, change in color, bleeding, ulceration, increased growth, etc., must in reality be put down as *late signs.*

7. Most nevi apparently remain true to type as far as our microscopic studies reveal. The changes that occur in their clinical appearance are either developmental or degenerative and do not indicate that an intradermal nevus is changing to a junction type for example. However, the question of possible transition must be left open.

8. Mixed types do occur, and any and every type of combination is possible. A few such combinations were seen in the present series.

9. All nevi including the junction type may be safely removed without wide excisions.

10. Where melanoma or squamous cell carcinoma is suspected or proven, radical removal and, if indicated, node dissection of the drainage area should be done promptly.

11. Biopsies, if followed immediately by the indicated treatment, may be safely performed and may save unnecessarily radical procedures.

12. Too much stress must not be placed on the microscopic examination alone. The clinical course of the lesion is also important and serves to control errors in opinion on single skin sections which may be confusing and difficult to interpret at times.

13. The differential diagnosis of the various nevi offers more of a problem from the clinical standpoint than is generally supposed. In reviewing a large series of cases checked with the microscopic diagnosis, even in a dermatologic clinic, this becomes apparent.

14. Extensive excisions carried out with the electric cutting current should not be cause for concern, as these wounds all heal nicely without skin grafting. I have excised a number of areas measuring more than 7½ inches in diameter, several in patients over 60 years of age, with perfect healing that resulted in a fine smooth flat scar.

I wish to express particular thanks to Dr. Elsa A. S. Barthel and Dr. David L. Satenstein for checking doubtful microscopic sections.

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The Importance of the Family Doctor in the Treatment of the Neuroses

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THE family doctor occupies a unique position in the community, and has a better opportunity than any other professional or lay person to understand the neuroses in all phases. Since it is a well-established fact that functional nervous disorders have their beginnings even in infancy, no one has a better opportunity to exercise the art of preventive medicine in a mental hygiene direction than the family doctor. It is he who helps to guide the fundamental requirement of adequate nutrition and physical well-being of the developing child. It is to the doctor that the mother turns for guidance in matters pertaining to conduct and control of her children and for aid in solving her own problems and those of household management. The father, too, comes to the physician with his difficulties for solace and for guidance. Thus, by the confidence of the family in him, the doctor has unusual opportunity to obtain a full perspective of every phase of the existence of all members of the household. He has, therefore, the privilege and obligation of correcting emotional difficulties in parents during and even before the time that these inadequacies are adversely influencing the child.

As the children in the community grow older and their lives become more complicated by school and extracurricular activities, they begin to demonstrate weaknesses and deviations from normal long before the signs of potential trouble are recognizable as sickness. The physician, even through casual contact with the family, can detect the beginnings of dormant emotional struggles, of early avoidance reactions, and other personality defects, and by his appraisal, careful handling of the situation, and wise counsel, he is often able to relieve the difficulty before it is even recognized as a problem by either the parent or the child.

The local physician, therefore, is truly a child psychiatrist and a mental hygienist and frequently practices this branch of medicine with a high degree of skill, although scarcely aware of the brilliance of his contribution to the child, to the parent, and to the community.

In adolescence and early adulthood as young people are becoming more distinctly individual and more aware of their self-importance, their problems increase and their inadequacies become more prominent until their difficulties are more readily recognized by those about them. These youths appear before their physicians at the suggestion of their parents or teachers, although often on their own responsibility, and seek an opportunity for discussion with the hope of a better understanding of themselves. The doctor who takes time to listen to these young people, to think with them through their problems, and to aid them to develop adequate mental habits for the meeting of their difficulties, becomes automatically a psychiatrist, a philosopher, and a community counselor. When emotional inadequacies have progressed too far and real neuroses are in evidence with anxieties, obsessions, or other manifestations of serious functional nervous disorders, it is necessary that careful detailed studies be made in order to obtain a correct and accurate appraisal of the physical and nervous condition of the patient, and it is also necessary to estimate carefully the environmental and social influences which may be contributing to the illness. Frequently, what seems a potentially serious problem may be averted in its incipiency by careful and judicious handling. Many of these simpler cases are promptly relieved of their anxieties by discussion with an understanding, competent physician, and a long and difficult illness is avoided. When the problem is more deep-seated and intricate and it seems wise for the investigation and assistance to be somewhat more complete, a psychiatrist should prove helpful. It may be necessary to refer some patients to a hospital or a sanatorium for a more thorough and detailed physical and nervous examination and a psy-

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chiatric survey. Such a study is readily undertaken in the large general hospital where psychiatric help is becoming increasingly available to all of the various services.

In the modern general hospital an effort is made to combine the medical and surgical investigation with a social and psychiatric evaluation, so that through the joint efforts of the several physicians studying the patient there is the possibility of approximating the efficiency of one good all-around physician who has the whole situation in hand, such as does the doctor at home. By conference and discussion, a unified opinion is reached and a suitable program outlined taking into consideration every phase of the case. The psychiatrist probably thinks more closely on the level of the general practitioner than any other specialist, for he is continually making an effort to understand the patient as a total unit made up of many parts, handicapped by sickness, modified by experience, and altered by custom. Therefore, it frequently falls to the lot of the psychiatrist to combine and sort the data, to appraise the psychiatric and somatic components and their respective interrelationships, and to determine what degree of importance each factor shall play in the treatment program. When the patient is discharged from the hospital to return home to the care of his family physician, a report must follow from the hospital to the doctor covering all phases of the case and outlining the suggestions for procedure in treatment.

All too frequently the patient with a severe neurosis comes into a general hospital for a survey expecting a prompt recovery and leaves badly disappointed that this has not occurred, but when a patient comes in understanding that his admission is primarily for a survey and then goes back to the family doctor for an outline of psychiatric treatment and procedure, he is in an excellent and optimistic frame of mind to accept those restrictions, disciplinary régimes, or other measures which may seem wise.

It has been our experience during the past few years that physicians in general practice who refer patients with neuroses have an increasingly better understanding of this large problem, and are increasingly more adequate in their ability to handle these patients when returned to their care. However, it is astonishing to note how many patients come into a general hospital for medical, surgical, or other reasons, whose ailments are intimately connected with a deep-seated neurosis and who obtain gratifying relief by friendly psychiatric interviews while in the hospital. A few years ago a request for a psychiatric consultation even on a medical ward was quite unusual, whereas at the present time about one-quarter of the patients in certain hospitals are in contact with some form of psychiatric assistance. It is becoming increasingly important to the average patient that he be understood as an individual as well as that he have a diagnosis as to his physical condition. Those physicians who fail to recognize the emotional factors in the make-up of a patient and the problems surrounding that patient, as well as his illness, are incomplete in their understanding and the patients themselves notice this omission. The family doctor is somewhat handicapped in that occasionally he is too intimate with his patients to permit a full confession and the giving of complete confidence; however, not infrequently after a patient has discussed some such situation with a psychiatrist he will then agree to discuss the whole problem more fully with the family doctor when reassured as to his competency and ability to retain confidences.

As a general rule, when a patient comes to a hospital or a sanatorium because of a frank neurosis, he is tremendously relieved by the rest and isolation and sense of protection that he obtains through removal from his home environment. Even though he may be on a ward, he nevertheless is in different surroundings and can think somewhat more objectively about his whole problem. He is therefore able to discuss himself and his difficulties more frankly and remains emotionally better controlled while doing so. Under these circumstances it is well to complete all necessary physical studies as quickly as convenient so that the patient's perspective may be thrown forward on a factual basis and so that the psychiatrist may have an authoritative platform of known positive or negative factors upon which to base discussions, explanations, and suggestions. It is particularly important that an effort be made to have the patient understand and obtain a proper perspective of the interrelations of his somatic and psychic components.

The old discussion of "mind over matter" which has gone on for years has gradually become more clarified since investigation has been able to prove actual demonstrative reactions in the body as the result of anxiety, fear, and other emotional experiences. The average intelligent layman who keeps abreast of the times reads medical lore in papers and magazines, and in spite of many errors in this popular literature he knows pretty well what the up-to-date doctor is discussing. It is often most helpful to explain recent concepts and their qualifications to an intelligent patient who may have been led into misinterpretations, from which doubts and uncertainties are likely to arise.

There are some people, lay and medical, who lack sufficient elasticity of mind to accept new ideas and with whom discussions usually prove fruitless; however, when a patient with a conversion hysteria can understand the psychologic mechanism of his escape reaction, its sources, and how it has influenced his physiology to create symptoms, he has gone a long way toward recovery.

The usual patient with a neurosis during hospital or sanatorium care has a number of so-called psychotherapeutic conferences or talks with his psychiatrist so that by the time he is ready to return to his home he should be relatively well oriented as to his difficulty, and is learning new ways of meeting his now recognized inadequacies so that he can face rather than avoid situations adverse to him. He is like a man with a broken leg who has been in a cast and has now recovered sufficiently to leave his splints in the hospital and is ready to learn to walk again. He has to make efforts which may prove difficult and painful, but with patient reassurance and guidance he eventually succeeds. The patient with the neurosis is trying to learn new ways of meeting old situations which before have always proved failures to him and which his neurosis helped him to avoid. The psychiatrist may have helped his confidence, his perspective, and his philosophy, and may have taught him to recognize some of his potential abilities with which to do a better job of living, but the patient ultimately relies upon his family doctor to help guide him further. He quickly appreciates the ability of his doctor to understand his struggle and his willingness to take time to help him.

By and large, psychotherapy is a matter of common sense, wise counsel, and optimistic philosophy founded upon an understanding of the patient and his problem and an interest in trying to help him solve it. Most patients who have been ill enough to require hospitalization or sanatorium care will convalesce better if placed on a scheduled program to guide them as to the amount of work they may do, the amount of rest they may require, and the kind of fun they should have. A fixed program which runs along much the same each day, and which permits a gradual increase of activities without seeming to change too fast, holds the patient's confidence in his abilities, which aids him to develop tolerance to certain given tasks. He may have been accustomed to daily contact with his temporary physicians and will have to be seen rather frequently until he has had an opportunity to become again adjusted to his former situation. Often it is helpful for the patient to know that his doctors have been in touch with each other and have discussed his case and that the treatment is modified from time to time as a result of such a conference. Gradually the patient learns to meet problems and to handle them adequately. He becomes less and less emotionally disturbed and begins to recognize that his family physician has finally led him through the morass of his neurosis and back into the field of normalcy.

No one has a better opportunity or a larger obligation and is able to do more than the family doctor in the treatment and prevention of the neuroses.

AUTHORIZATION OF PHYSICAL EXAMINATIONS, TREATMENTS, OPERATIONS, AND AUTOPSIES

Ordinarily an operation must be performed strictly within the limits of the authority that has been given. Authority may be given, however, for the operating physician to use his own judgment, and this usually should be demanded by the physician.

Written Consent Preferred

Consent by word of mouth to an operation or an autopsy is probably the most common form of consent. . . . Oral consent is, however, open to misunderstanding and may be difficult of proof. Whenever it is to be relied on, consent should be given in unequivocal terms, in the presence of one or more disinterested witnesses. Written consent to an operation or to an autopsy is by far the safest, for it permits a clear record of the nature and extent of the operation or autopsy that is authorized. If the patient is a minor, authority for an operation must come from his parent or guardian.—*Board of Trustees, The Medical Society of the State of Pennsylvania.*

The Management of Shock and Toxemia in Severe Burns

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A CHEMICAL study of blood from patients with extensive superficial burns under treatment at the Pennsylvania Hospital has shown a marked hypoproteinemia concomitant with hemoconcentration. Repeated transfusions of blood plasma have proved a satisfactory control for this condition. Evidence obtained from 6 patients indicates that the capillaries return to a state of normal permeability some 40 hours after the burn. At this time the plasma volume and circulating plasma protein are restored to normal values by a large transfusion of plasma (the quantity calculated by the authors' formula). Saline and glucose solutions are given in limited amounts, 2 or 3 liters per 24 hours. This program results in a prompt recovery of the circulation and kidney function. It avoids the development of massive edema so prevalent under the old régime of "forced fluids."

Burn Shock or Fluid Shift

Shock follows every severe burn. It is the circulatory failure which begins within a few hours and persists for 2 or 3 days after the burn. It is caused by a shift of fluid, a leakage of plasma from the vascular compartment into the tissue spaces. Although some fluid is lost externally from the burned surface, the major portion of the plasma lost from the blood stream is pooled in the tissues. This shift of fluid results in hemoconcentration, circulatory failure due to diminished plasma volume, and the massive edema at the site of the burn. A schematic representation of the process is shown in Fig. 1. In the normal capillary bed there is a distribution of fluid across the vessel wall as shown in Fig. 1, A. On the arterial side, blood pressure (hydrostatic pressure) forces water and crystalloids out into the tissue spaces. At the venous end of the capillary, where the blood pressure is less than the filtration level, the osmotically active plasma proteins function as a suction pump drawing water and crystalloids back into the blood stream. This circuit of fluid is regulated by a delicate balance between permeability of the capillary wall, blood pressure, and osmotic pressure of the plasma proteins. As a result of the burn, the permeability of the capillary wall is increased. Plasma protein passes into the tissue spaces. There is little or no return of fluid into the blood vessels, as represented in Fig. 1, B.

In spite of the extreme hemoconcentration, the burned patient is not dehydrated. On the contrary, there is an abnormal distribution of fluid and a serious impairment in the mechanism which controls the distribution of fluid. The situation presents a paradox of concentrated, partially dehydrated blood flowing through edematous waterlogged tissues. Giving large amounts of water by mouth or glucose solution intravenously merely aggravates the edema without improving the circulation. This procedure

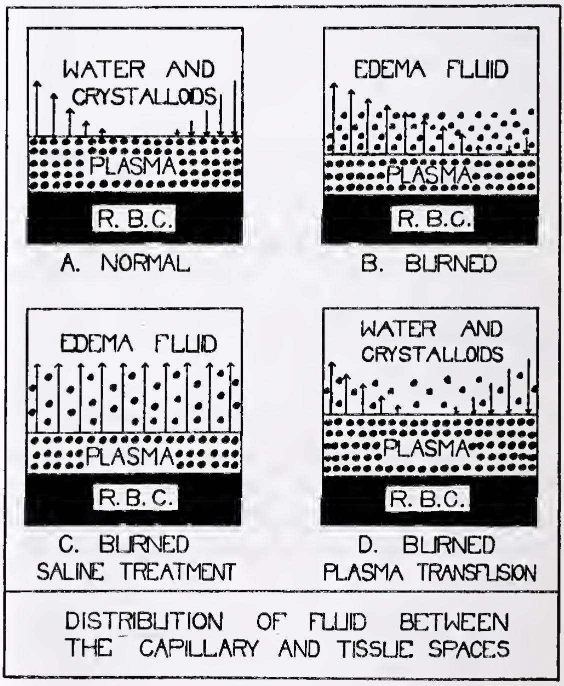

Fig. 1.

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is irrational and may lead to water intoxication as pointed out by Trusler. Intravenous administration of saline is beneficial in limited amounts only. Excessive or "unphysiologic" amounts of saline produce a massive edema and further reduce the level of plasma protein, a condition represented in Fig. 1, C. After the capillaries recover, the administration of plasma will restore the fluid balance to a normal state represented in Fig. 1, D. The extra plasma protein given as a plasma transfusion draws out the edema fluid from the tissues and restores the plasma volume to normal. The excess fluid is eliminated through the kidney.

In a series of patients studied by the authors, plasma transfusions have been used to marked advantage. Plasma is preferred to whole blood because the need is for plasma protein rather than for erythrocytes. Although whole blood has been used for many cases of burns, the practice involves some danger. The added red cells may raise the viscosity of the blood to a critical level and bring on circulatory collapse. Fig. 2, from one of our case histories, shows the procedure adopted for the control of shock. Hematocrit values and plasma protein levels were determined at frequent intervals. Calculated plasma volumes and total quantities of circulating plasma protein are plotted against time for a period of 3 days following the burn. Small transfusions of blood plasma, 200 or 300 Ml. each, were given at the sixth, fifteenth, and thirtieth hours. This treatment prevented a dangerous drop in blood pressure and plasma volume. By the fortieth hour the capillaries had recovered sufficiently to hold back plasma protein. A large transfusion, approximately 900 Ml. of plasma, was then given. The plasma volume and total protein came back to normal almost immediately. Edema began to subside soon afterward. This kind of result has been obtained in 5 other cases of severe burns.

The requirement for plasma varies with each case. The less severe cases have responded satisfactorily to transfusions totaling 500 c.c. of plasma. In very severe cases a continuous transfusion requiring 2 or 3 liters of plasma was given. The following serves as a working rule applicable except in severe anemia and polycythemia vera: Enough plasma should be given to keep the hematocrit value between 50 and 55 per cent cells and the plasma protein level about 6 grams per cent until the capillaries return to a normal state of permeability. At that time enough plasma is given to restore the plasma volume to normal. For calculating this quantity, the authors have proposed the following formula:

$$\text{Plasma protein requirement in grams} = 3.5\ W - \frac{W\ (100\text{-}Ho)\ Hn\ Po}{2\ (100\text{-}Hn)\ Ho}$$

W = body weight in kilograms.
Hn = normal hematocrit value, per cent cells.
Ho = observed hematocrit.
Pn = normal plasma protein, grams per cent.
Po = observed plasma protein.

The plasma protein requirement in grams multiplied by 14 gives the required volume in milliliters of plasma.

Suprarenal cortical hormone has been recommended for the treatment of burn shock. At the present time the mechanism of its action is unknown and its use is purely empiric. In the authors' experience, hormone gives best results when used in conjunction with plasma transfusions. The dose for adults was 5 or 10 Ml. of eschatin given intravenously at 6-hour intervals for 36 or 42 hours following the burn. Saline must be restricted to one liter of solution during the cortical hormone administration unless there is a hypochloremia. Additional fluid necessary is given as 5 per cent glucose in distilled water or as plasma. Disastrous consequences may result from large quantities of saline together with adrenal cortical hormone. A full discussion of this subject must be postponed for a future report.

Toxemia in Burns

There is much debate concerning the nature and course of the toxemia in a severe burn. Existence of a "burn toxin" has been advocated by a score of authors and questioned by as many more. However, there is complete agreement on 2 points. First, almost every patient shows a "toxic appearance" at some time during the course of the illness. Second, there is an imposing array of evidence showing anatomic and functional changes in parenchymal organs far removed from the site of the burn. In agreement with Wilson, we recognize 2 types of toxemia, acute and septic.

Acute toxemia is a direct result of the burn and occurs during the first 3 or 4 days. Secondary shock may merge into toxemia with few clear-cut symptoms of either stage. Vomiting is an early symptom of toxemia and is followed by mental changes. The patient, especially a child, will be apathetic and listless at one moment, then irritable and restless. Sedatives have little or no effect. The patient may pass into a wild delirium or sink into a coma. The temperature rises and persists at a high level. Blood pressure is usually normal or slightly low, and falls precipitously only in fatal cases. Liver damage is indicated by jaundice and results of function tests. A marked albuminuria occurs in the majority of cases. Treatment of acute toxemia is general and supportive, not specific. Immediate tanning of the burned area is important. Careful control of the fluid shift by plasma transfusions modifies the appearance and course of the toxemia. Maintenance of a good circulation reduces tissue anoxia and facilitates kidney function. Too much stress cannot be put on the importance of a normal or better than normal output of urine. A generous administration of glucose is supposed to reduce the severity of the damage to the liver.

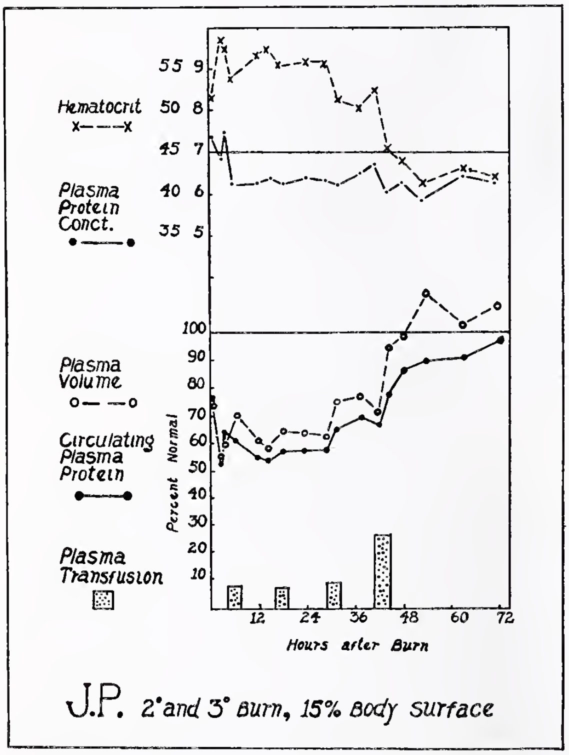

Fig. 2.

Infection in burns must be considered in relation to toxemia. Septic toxemia can be just as serious for the patient's welfare as the acute toxemia described above. The symptoms and course of the case resemble those of any other infection in a surgical lesion. Tanning with silver nitrate and tannic acid inhibits bacterial growth. Hexyl-dichlor-resorcinol in a tannic acid jelly has given good results in one large hospital. The aniline dyes, gentian violet, brilliant green, and neutral acriflavine, have been used as bacteriostatic tanning agents. Ultraviolet irradiations have been beneficial in certain cases. Sulfanilamide by mouth has been used in a few cases. Dusting sulfanilamide powder on the burned surface has been reported in recent months. In view of the fact that some degree of liver damage results from severe burns, the administration of sulfonamides is a potential danger. General measures such as aseptic technic in cleaning and tanning the lesion, careful nursing, and scrupulous care in dressings are very effective in reducing infection.

Summary

Treatment of a severe burn must be directed toward both the local wound and the systemic disturbances, shock and toxemia. At the present time, plasma transfusions appear to be the best method of combating shock or fluid shift. Suprarenal cortical hormone, although used empirically, is a valuable therapeutic agent, especially in conjunction with plasma transfusions. There is no specific treatment for the toxemia resulting from burns. General measures must be used. The management of the severely burned patient may be greatly improved by a careful consideration of the physiologic principles involved.

ABSTRACT OF DISCUSSION

Jonathan E. Rhoads (Philadelphia): In spite of the numerous improvements which have taken place in the treatment of severe burns, the mortality must still be high because in extensive burns, even when treated early, deaths are by no means uncommon.

Twenty or 25 years ago the danger of infection was first thoroughly appreciated. Fifteen years ago the local treatment of burns by tanning was introduced by Davidson. More than 10 years ago the importance of dehydration was shown by Underwood and the intravenous administration of saline and glucose solutions was introduced in the treatment. Following this the value of transfusion and finally of plasma transfusion was recognized.

Each of these innovations has impressed clinical observers as valuable. Due to the variations in individual burns, it has always been difficult to prove their value statistically. As each new idea has gained attention there has been a tendency to lose sight of the earlier gains. As an example of this, one might mention the not uncommon sight of a burned patient who has been tanned, and who has been carried through the fluid shift stage successfully, lying on unsterile sheets with cracks in the tan eschar and no dressings.

Unfortunately, there are on record patients who have survived the period of shock, the period of toxemia, and who have been protected from infection throughout the initial stages of their recovery, only to lose their lives with hemolytic streptococcic septicemia when all danger seemed past. It is, therefore, important to realize that a severe burn is a triple threat to life. It may kill by producing shock, it may kill by damaging the liver, adrenals, and other internal organs, and it may kill by establishing a large portal of entry for bacteria which usually remains open for weeks.

If one is successful in tanning a burn, the fact that it is still necessary to take extraordinary precautions against infection must not be forgotten. In one's enthusiasm for transfusion, do not neglect to treat the patient's pain.

The work which has just been presented demonstrates conclusively that, of the various fluids which may be given, the blood plasma best fills the physiologic needs of the burned patient. However, if plasma is not available, it is well to remember that whole blood transfusion is often of great value, especially in patients previously anemic, and that if neither plasma nor blood is available, the judicious use of intravenous saline has often been a life-saving measure in the opinion of good observers.

I wish particularly to emphasize one point which Dr. Elkinton has brought out. Massive plasma transfusions are not retained until the leaking capillaries have had time to regain their normal permeability. Furthermore, there is evidence that the plasma protein that escapes sooner or later finds its way back into the circulation, so that if very large doses of plasma are given when the capillaries are still leaking, there is likelihood of an excess of plasma being poured back into the circulation at a later date.

As far as I have been able to learn, the program carried on at the Pennsylvania Hospital is the first to demonstrate even in a rough way that the period of the duration of the increased capillary permeability resulting from burns was about 40 hours in the cases studied.

"MARCH FRACTURE" NOT LIMITED TO THOSE IN MILITARY SERVICE

March fracture, the name of which implies that the condition is associated with marching, may be seen in persons who are engaged in activities not connected with military service, Prentice L. Moore, M.D., and Allen N. Bracher, M.D., major and captain, respectively, United States Army Medical Corps, Hawaii, declare in the first issue of the new bimonthly periodical, *War Medicine,* published by the American Medical Association, Chicago, in co-operation with the National Research Council, Washington, D. C.

In reporting 3 such fractures, the 2 men say that "H. W. Meyerding, M.D., and G. A. Pollock, M.D., have well defined march fracture as 'a fracture of the second, third, or fourth metatarsal bones without known adequate cause.' The consensus of medical writers on this subject seems to be that the onset of symptoms is usually insidious, beginning with mild discomfort or burning in the foot. This was not found to be the case with our patients, who ascribed their disability to a definite time and period of activity accompanied with sudden, almost disabling pain."

The authors point out that there are only scattered reports of a few cases of march fracture in the American medical literature. Discussing their 3 cases, they say that in 2 of them the fracture followed participation in athletics, particularly track work, and in the other it followed a night march.

As to symptoms of the condition, the 2 men say that swelling in the back part of the foot begins approximately 12 hours after the onset of pain. When pressure is made over the involved metatarsal bone, discomfort is intense and the patient walks with a noticeable limp. An area of redness of the skin over the fracture site may be present.

"All of the men afflicted with the fracture were vigorous, young, and in an excellent state of health," they say in describing their 3 cases. "Two were seasoned soldiers and athletes. They walked into the dispensary when they first sought medical attention. With the scanty history they gave, each might have been treated for an injury to ligaments, a contusion, or metatarsalgia. Flat feet or other structural inadequacies may or may not be a predisposing factor. In the cases reported here the patients all had normal arches."

The conclusions of the 2 men are that "the march fracture may occur in seasoned soldiers in an excellent physical condition and training when they are engaged in athletics and marches. The onset of symptoms is with appreciable, sudden pain in the involved foot. The pain, however, is not so severe as to be incapacitating. Fatigue, overweight, underdevelopment, and functional disorders of the feet do not seem to be the underlying causes of this fracture."

They suggest that all foot complaints which fall into the category of metatarsalgias justify consideration of metatarsal fracture and the taking of a roentgen-ray film.

HYGEIA AUTHOR WARNS AGAINST THE RISKS OF UNDULANT FEVER

Even persons whose usual milk supply is pasteurized may be in danger of contracting undulant fever, also called brucellosis, from such sources as a soda fountain beverage in some small community in the course of a motor trip, or cream in coffee at a resort hotel, Harold J. Harris, M.D., Westport, N. Y., warns in the March issue of *Hygeia, The Health Magazine.*

In pointing out the necessity of precautions against this disease, which is transmitted to human beings through germs in unpasteurized milk, Dr. Harris declares: "The label on the bottle from a reliable dairy stating that the milk is pasteurized is the only safe guarantee. No vague assurance that the herd producing the milk has been tested should be enough. The test may have been for tuberculosis, not for contagious abortion (a term for undulant fever in cattle).

"Sample group testing seems to indicate that about 10 per cent of the population has become infected with the germ and cases have been reported from all over the civilized world. Of those infected, about 1 per cent are actively ill; the rest, while harboring the germ in their tissues, may never develop serious illness, or if they do, it may be only evanescently following some depleting, resistance-destroying experience. Coexistence with other diseases may bring serious results.

"Like syphilis, undulant fever is a great masquerader, appearing under many guises. Two cases of brucellosis rarely act alike. Until quite recently only the acute form was recognized. Since the introduction of more accurate tests, the chronic form is known to be far more common than the acute. In the chronic form, the one symptom common to all patients is fatigue."

A New Method for the Application of Radium Within the Uterine Cavity

With Particular Reference to Carcinoma of the Fundus

GEORGE E. PFAHLER, M.D., Sc.D.
Philadelphia, Pa.

RADIATION therapy has been used more and more during the past 30 years in the treatment of carcinoma of the cervix. The knowledge concerning the use of both radium and the x-rays, and concerning the technic and general management of carcinoma of the uterus, has increased until today radiation therapy receives first consideration, and is the method of choice in the treatment of carcinoma of the cervix. In the early stage, while the disease is strictly confined to the cervix, about 70 to 100 per cent of those treated skillfully and thoroughly by the combination of radium and x-rays show 5-year recoveries.

Carcinoma of the body of the uterus, on the other hand, has received less consideration and fewer cases have been treated by radiologists; first, because there are only about one-tenth as many cases, and second, because the operative results in carcinoma of the body of the uterus are relatively better, due to the fact that in cancer of the body of the uterus there is less likely to be early metastasis, and when metastasis is not present operation is relatively simple. All gynecologists prefer operation to irradiation when the disease is confined to the uterus and when there is no definite contraindication to operation. This is especially true when the microscopic study of the specimen taken by preliminary curettage shows the disease to belong to the more or less differentiated type, or Grades I and II. When the disease belongs to Grades III and IV, one may consider either the replacement of operation by irradiation or preliminary irradiation followed by operation.

While it is true that a very large percentage of cancer of the body of the uterus is recognized while still operable, there are still too many cases remaining undiagnosed. One should always think of this disease when there is bloody, watery, or leukorrheal discharge near or following the menopause. In the early stage this is usually intermittent. It may be associated with pain due to obstruction of the cervical canal. There may be intervals of days or weeks without discharge. Cutler and Buschke[1] say, "The common misinterpretation of this hemorrhage is found in patients in whom this disease is associated with uterine fibroids. Such an association is not uncommon. Norris and Dunne report 96 cases of carcinoma of the uterine body associated with myomas in a total of 258 cases (37 per cent)."

The diagnosis must be made by curettage or by lipiodol injections and x-ray studies, or a combination of the two. The uterography with lipiodol gives the exact location of the disease and is sometimes helpful in the placement of radium. It has always seemed to me advisable when doing a curettage for diagnostic purposes to pack radium into the uterine canal, which can be done easily under the one anesthetic; if the hemorrhage or discharge is due merely to an endometrial hyperplasia, it will be cured at the same time, and if it is due to carcinoma, the packing of the radium will form the preliminary step in the combination treatment with irradiation followed by operation.

In a study made by Heyman the comparative results of surgical and radiologic treatment

TABLE I

THE CURE RATE IN OPERABLE CASES OF CARCINOMA OF THE BODY

	Surgical Treatment (*Literature of the World*)	*Radiologic Treatment* (*Radiumhemmet, 1913-1923*)
Cases treated	323	52
Free from recurrence	190	28
Percentage cured	58.8	50

Read before the Section on Clinical Laboratory Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

TABLE II

SURGICAL RESULTS IN CARCINOMA OF THE UTERINE BODY

Author	*No. Cases Admitted*	*No. Cases Operated Upon*	*Operability Per cent*	*Primary Mortality Per cent*	*Relative Cure Per cent*	*Absolute Cure Per cent*
Franz	62	58	93.5	3.4	44.8	41.9
Volbracht, 1936 (up to 1925) (1926-1930)	286 112	133 70	46 62			44.8 59.8
Stacy, 1925, Mayo Clinic (1907-1921)		269		5.2	40.1* (4 yrs.)	
Norris and Vogt, 1924 (Univ. Penna.)		57 (all cases) 26 (early cases)		7.3	37.5 (3 yrs.) 54.0	
Meigs, 1934 (Mass. Gen. Hosp.)		44		6.8	68.1 (5 yrs.)	
Pankow (collected), 1931			78.8	8.43	55.7	41.07

* Stacy reports 50.2 per cent relative cures out of 215 traced patients. This figure is based on the number of patients operated upon. (The total of patients examined is not given.)

(made before the more modern method of applying radium was used) are indicated in Table I.

Heyman[2] says, "As radiologic treatment in carcinoma of the body has in some places yielded worse results than in cases of carcinoma of the collum, one has felt inclined to conclude that radiotherapy would be less efficacious in cases of adenocarcinoma. The correctness of this conclusion seems questionable. To me it seems just as likely that the cause is to be found in technical difficulties met with in the treatment of carcinoma of the body.

"In a relatively large number of cases of cancer of the body of the uterus we have to deal with a dilated and irregular uterine cavity. Into this we must introduce a radium container small enough to pass through the dilated cervix. It is reasonable to assume that in many cases small or large areas of the growth may fail to come in close contact with the radium container. That this is so would seem to be borne out by our observation of patients operated upon after radiologic treatment. For not infrequently one finds that the growth has completely disappeared in the lower part of the body where the cavity is narrow, while a small remnant of the growth will be found in the excavated area of the upper part because that has been farther away from the source of radiation."

Cutler and Buschke have made a more recent study of the surgical results in carcinoma of the uterine body as shown in Table II. It will be noted in this table that the operability has varied from 46 per cent to 93.5 per cent (average percentage=67), and the relative cure (operative cases only) has varied from 37.5 per cent to 68.1 (average=50) per cent. The absolute cure

TABLE III

CARCINOMA OF THE UTERINE BODY

Consecutive Cases to 1930 (Healy, Memorial Hospital)
(1936)

Hysterectomy Preceded or Followed by Irradiation		Irradiation Alone	
No. Cases Treated	*Relative Cures Per cent*	*No. Cases Treated*	*Relative Cures Per cent*
Histologic Grade I (11 cases)	100 (4-14 years)	3	100 (4-14 years)
Histologic Grade II (30 cases)	93.4 (5 years)	27	74 (6 years)
Histologic Grade III (24 cases*)	50 (5 years)	21	70 (5 years)
Histologic Grade IV (6 cases)	33 (4 years)	2	100 (4-8 years)
Total cases 71	64.1	53	72

* Preoperative irradiation, 15 cases, with relative cure rate 60 per cent (5 years). Postoperative irradiation, 9 cases, with relative cure rate 33.3 per cent (5 years). Histologic grading as follows:

Grade I. Papillary adenoma malignum.
Grade II. Adenoma malignum.
Grade III. Adenocarcinoma.
Grade IV. Solid cellular anaplastic adenocarcinoma.

rate by operation (of patients examined) has varied from 41.7 per cent to 59.8 (average=44.5) per cent. The primary mortality rate has varied from 3.4 per cent to 8.43 (average=6) per cent. It is important to observe, therefore, that the operative mortality of carcinoma of the body of the uterus is definitely lower and the cures definitely higher than the surgical treatment of carcinoma of the cervix.

When depending upon the surgical treatment alone in carcinoma of the fundus, one should take into account the risks involved in a complete hysterectomy. Cutler and Buschke[1] give their reasons and conclude: "Carcinomatous implants on the endocervix, however, are frequently observed and for this reason any surgical removal of the uterus should be in the form of a complete hysterectomy to include the entire cervix."

Healy[3] has made a comparison of the cases treated by hysterectomy preceded or followed by irradiation and of another series of cases treated by irradiation alone, as shown in Table III. It will be observed from the footnote of this table that the cases treated by preoperative irradiation followed by hysterectomy show almost twice as many cures as by operation followed by irradiation. This, therefore, forms another argument in favor of making the application of radium at the time of doing the diagnostic curettage. If the specimen is examined promptly, the duration of the application of the radium can be adapted to the conditions present.

Cutler and Buschke have collected statistics (Table IV) on radiation therapy alone in carcinoma of the uterine body which show results that certainly justify irradiation therapy alone when necessary, especially in those patients who cannot properly be operated upon either because of the extent of the disease or because of serious surgical risks. This is indicated by the second footnote of Table IV, which states: "Cases irradiated were all those rejected by surgery because of extent of lesion or poor surgical risk."

Irradiation Technic

It is an accepted fact that the combined use of radium and x-rays gives the best results in carcinoma of the cervix. The combined use of both these agents is indicated even more in carcinoma of the fundus when one is depending upon irradiation alone. In most operable cases it is probably safe to depend upon the preliminary preoperative intra-cavitary application of radium alone, which I think can properly be done at the time of the curettage. When the microscopic study indicates that a case belongs to Grade III or IV, it may be advisable to add to the radium treatment external irradiation by the supervoltage technic. With this preoperative irradiation, we may expect best results when it is followed by hysterectomy. This preoperative irradiation is especially indicated if for any reason it seems advisable to do only a supravaginal hysterectomy.

When dealing with carcinoma of the cervix, one can adapt an applicator to the size, shape,

Table IV

Results of Radiation Therapy Alone in Carcinoma of the Uterine Body

Author	*No. Cases Irradiated*			*Relative Cure Rate Per cent*
Norris and Dunne (Univ. Penna.)	89			43.8* (5 years)
Heyman (Radiumhemmet 1914-1930) 1936	Clinically operable	85	25	(41.2)
	Technically operable	100	30	(30.0) 5 years
	Inoperable	39	9	(23.1)
		224	64	(28.5) of all cases
Healy (Memorial Hospital to 1930)	53†			72 (4-8 years)
Wintz, 1913-1923 (Pankow)	Stages I-IV: 101			Stages I-IV: 34.6 5 years
	Stages I-II: 48			Stages I-II: 66.6
Maier-Opitz (Pankow)	Stages I-IV: 128			Stages I-IV: 36.7 5 years
	Stages I-II: 74			Stages I-II: 52.7
Pankow (Collected)	Stages I-IV: 720			Stages I-IV: 36.3 5 years
	Stages I-II: 483			Stages I-II: 47.8

* 2400 mg.-hour average dose considered by authors to be insufficient.
† Cases irradiated were all those rejected by surgery because of extent of lesion or poor surgical risk.
None of the above cases were treated by the method described by me.

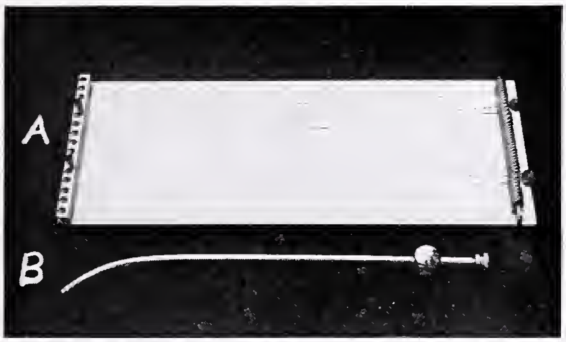

Fig. 1. (A) Is a chrome-plated brass frame with a rack at one end made to fit exactly my 10 mg. radium tubes as described in the text. There are 2 tubes in place, each one attached to the wire with a bead used for identification at the opposite end. These are then held in place by means of a coil of spring wire. This prevents entanglement. After the capsules are inserted, the wires are clamped with a pair of hemostatic forceps. These hemostatic forceps can be held to the side of the thigh by means of adhesive plaster. We have found it convenient to wrap the ends of the wire in cellophane so as not to become entangled with clothing. (B) Is the plunger. It consists of a brass rod curved like a uterine sound. The ball near the end makes it easy to grasp and then make use of the plunger. The tube is inserted at the end of this applicator and held firmly by the wire at the other end. After the radium has been inserted, the plunger is pushed forward so as to deposit the capsule in the fundus or in the cornua of the uterus. This procedure is repeated until the uterine cavity has become filled.

and location, and a radium capsule can easily be inserted into the cervix. It is my practice to place radium (usually 150 mg. in 2 mm. platinum) throughout the whole length of the canal.

When dealing with carcinoma of the fundus, the cavity is very irregular and the ordinary straight or curved tubal applicator cannot possibly reach both cornua or all parts of the cavity evenly. Schmitz,[4] in a paper before the American Radium Society (1930), recognized this and says: "A radium capsule inserted into the uterine cavity may and does shift its position as much as 2.75 cm., and hence the radium intensity applied to one cornu may be only 25 per cent of that attained at the opposite angle." He tried to solve this problem by placing the radium capsules in 2 tubes which could be separated in the form of a "Y" after insertion into the uterine canal. The Schmitz arrangement would serve to irradiate a normal uterine cavity, but an irregular cavity would not be evenly irradiated. More recently, Milton Friedman[5] has described an angular apparatus that gives 3 or 4 areas of treatment which he tries to adapt to the particular cavity present.

About 5 years ago I conceived the idea of utilizing my 10 mg. radium tubes, each of which consists of an inner capsule containing 10 mg. of radium, in 1 mm. of platinum, covered by another capsule of 1 mm. of gold. These are inserted, one at a time, until the entire uterine cavity and uterine canal are filled. This usually allows the use of from 8 to 15 of these capsules. The photograph of the capsules and the apparatus used for insertion is shown in Fig. 1. These are left in place according to indications from 24 to 40 hours. The distribution of these tubes in the uterus is shown in Figs. 2, 3, and 4. The radiation effect and its distribution in relation to the pelvic cavity are shown by a roentgenogram, made by having the patient lie on a Bucky-Potter diaphragm for 4 minutes, at the termination of which an instantaneous roentgen-ray exposure is made on the same film. A second film (instantaneous without fogging effect) is then made so as to show the relation of the tubes to the bony pelvis. The lead strips in the Bucky-Potter diaphragm, actually 4 mm. in depth, add a filtering effect to the radiation reaching the film; thus the intensity of the irradiation in the region of the uterus is even greater than that indicated by this fogging effect in 4 minutes.

I insert the radium capsules at the time of doing the dilatation and curettement. These

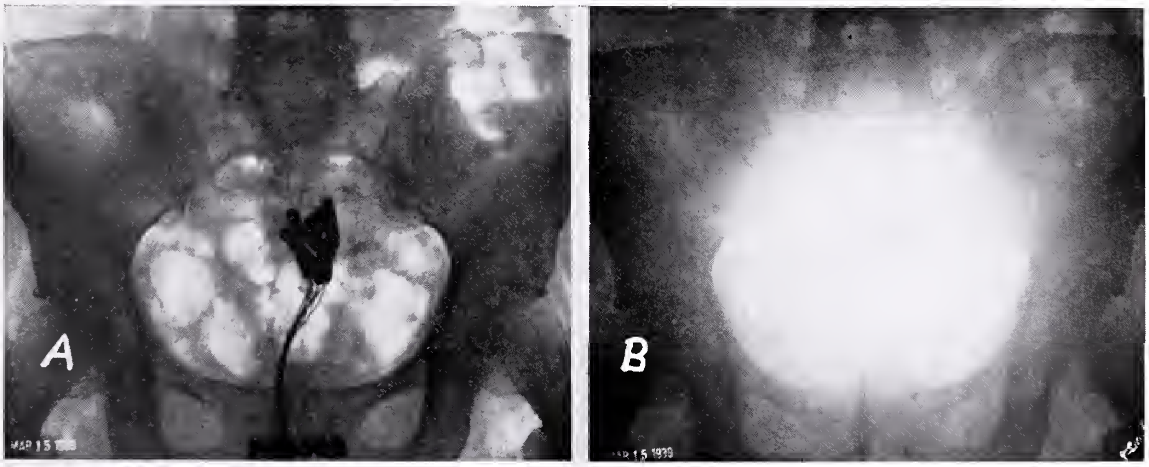

Fig. 2. (A) Shows the distribution of 10 radium tubes within the fundus in a case of adenocarcinoma. (B) Shows the distribution of the radiation from an exposure to a photographic film underneath a Bucky-Potter diaphragm during a period of 6 minutes. Please note the distribution of this radiation evenly throughout the pelvic area. The radium was left in place 29 hours.

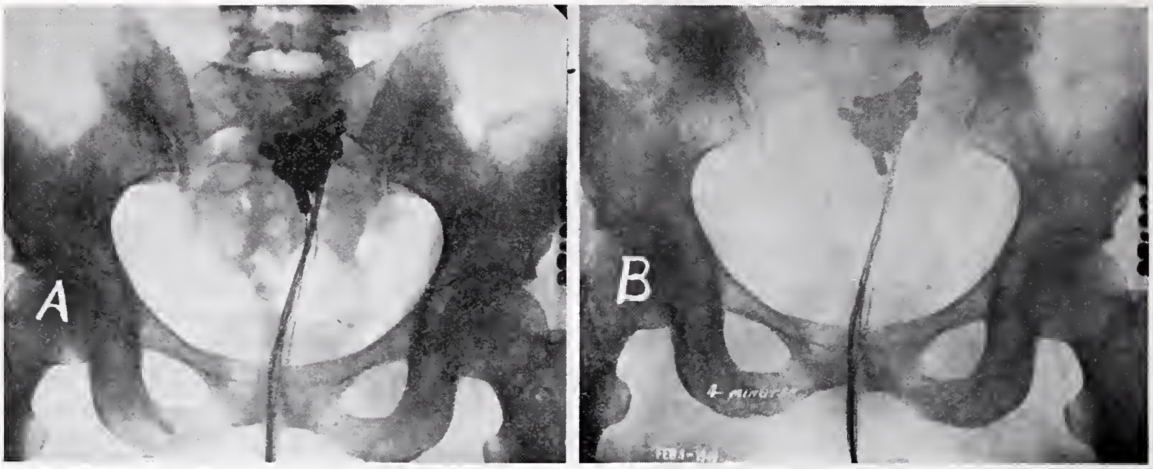

Fig. 3. (A) Shows a uterine cavity with fifteen 10-mg. capsules inserted. The microscopic examination in this case showed endocervicitis associated with uterine fibroid. (B) Shows the irradiation effects through a Bucky-Potter diaphragm photographed at the end of 4 minutes. The radium was left in place 43 hours.

capsules measure 21.2 mm. in length by 5.2 mm. in thickness. Each capsule is attached to a special wire which is 0.5 mm. in diameter, and 14 inches doubled in length. The capsule is then held in place at the end of a curved applicator until it is placed into the uterine cavity. The curved applicator is shaped like a uterine sound. This not only permits easier access to the uterine cavity but permits one to direct the radium into each cornu. After it is in place, we then push upon the plunger and the radium capsule is released. It is necessary to remove the radium capsules in exactly reverse order to that in which they were inserted. Therefore, in order to distinguish the last capsule from the first, etc., we apply a series of beads of graduated sizes to each of the wires so that the one with the largest bead is the one that is inserted last. When it is time to remove the radium, we gently pull upon the largest beaded wire first, and up to the present time we have had no difficulty in removing these radium capsules. A special holder for the wired capsules is shown in Fig. 1.

After having developed this method of applying radium, I found that the same idea had been carried out independently by Heyman at the Radiumhemmet in Stockholm, which is referred to by Cutler and Buschke. Referring to Heyman's technic, they say: "His technic now consists of introducing into the uterus 8 mg. radium tubes, 20 mm. in length, with an outside diameter of 2 mm. and a wall thickness of 1 mm. lead equivalent. These tubes are then placed in a small lead capsule. The uterus is packed with 8 to 16 such cylinders until the uterine cavity is completely filled. Special applicators are used for the insertion of these tubes. The radium may remain in the uterus up to 24 hours. Two such treatments are given with an average dose of 1500 mg. hours at each treatment. Heyman feels that the results for this type of lesion with this technic are superior to those of the

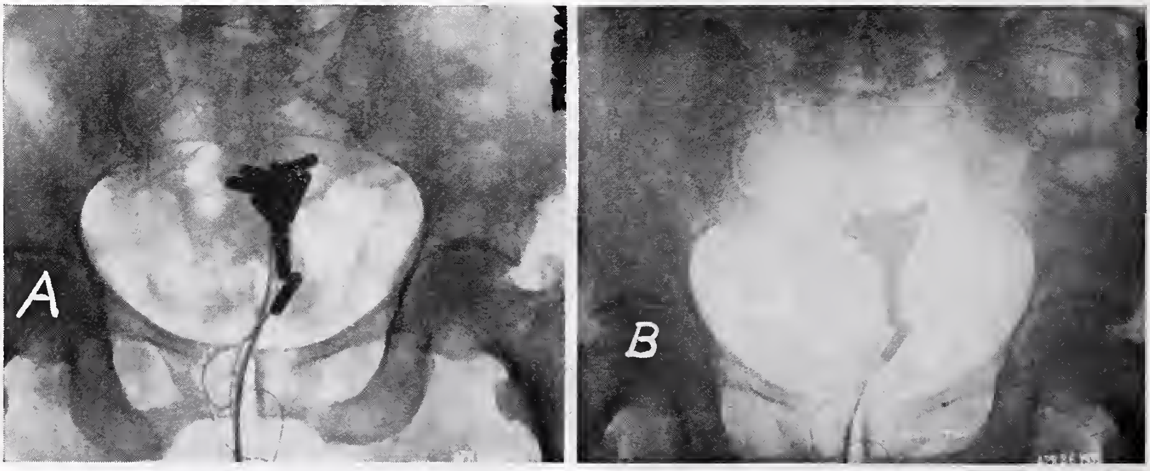

Fig. 4. (A) Shows the distribution of 11 radium capsules in the uterine cavity and uterine canal in a case of cervical polyp and atrophic endometrium, bleeding having occured 2 years after the menopause. (B) Shows the radiation effect through a Bucky-Potter diaphragm lead screen during a period of 5 minutes. The radium was left in place 30 hours.

ordinary uterine tandem as we have described."

It will be observed that Heyman's filtration is equivalent to "1 mm. of lead." The filtration which I have been using is equivalent to 4 mm. of lead. This utilizes only the hardest gamma rays, and it will be observed from the illustrations that the distribution of this radiation effect covers at least the entire pelvic area. It has been my practice to give only one of these applications for a period of 24 to 48 hours. It will be observed, therefore, that if the radium is left in place for 24 hours and 15 tubes are used, this will give 3600 mg. hours of irradiation. If one can insert only ten 10 mg. tubes in the uterine cavity, it would be possible to leave them in place for 36 hours to obtain the same dosage.

I have not treated enough of these cases to make statistics of any value, but on theoretic grounds, and on the basis of Heyman's impression, I am convinced that this is an improvement in the technic.

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ABSTRACT OF DISCUSSION

WILLIAM R. NICHOLSON (Philadelphia): We do not operate on cancer of the cervix, and in that I believe we are in accord with everybody else in this part of the world. We do not believe in the tremendously wide dissection practiced by Dr. Bonnie of London at the present time, because the initial mortality of that operation is so tremendous that one does not really save gross days in the lives of a hundred women by operating upon them in that way.

There is one thing I want to say about the diagnosis of cancer of the cervix. We never turn over a case for diagnostic removal of tissue to an inexperienced staff member unless someone is there to watch, because we have found that invariably he takes a little bit of a piece which would almost make a microscopic study without cutting sections instead of taking a good piece with normal tissue for comparison.

I do not approve either of the punch method of arriving at a diagnosis in fundal carcinoma because only normal mucous membrane may be obtained, whereas there may be carcinoma which is missed by anything less than a complete curettage.

I am thoroughly in accord with Dr. Pfahler's statement about fundal carcinoma. I have come to believe in recent years that all cases of fundal carcinoma, with very few exceptions, should be treated by intra-uterine radium before operation, and I thoroughly believe in operating upon every patient with fundal carcinoma. If I were a woman I would rather have carcinoma of the fundus of the uterus than of any other place in the human body, except perhaps the skin, and I believe in doing the operation after super-doses of radium have been given.

Dr. Pfahler brought out another point which I think is of extreme value; namely, when a patient is curetted for diagnosis, that is the time to put in radium, say 75 mg. instead of 150 mg. It can be taken out if the report comes back "nonmalignant," and if there is no malignancy, no time has been lost.

To my mind, one of the most important things is to be sure that we get the tissue we are after when doing the diagnostic procedure.

I am enthusiastic about the method of multiple capsule insertion as explained by Dr. Pfahler. By using this technic I feel certain that areas of diseased endometrium will be reached which in the past have escaped the emanations. This modification is a distinct advance in intra-uterine radium application.

TABLE TENNIS?

Have you ever played ping-pong, and noticed how you go along on a point, driving the ball back and forth, both you and your opponent intent on outsteadying the other, and after awhile the continuous steady hitting of the ball gets to be sort of monotonous, and finally after hitting a half dozen or so good drives, one of you will haul off and smack the dickens out of the little celluloid pellet and drive it far off the table or into the net?

Perhaps you never thought of it, but most of us live just like that. We go along day by day, working hard, living right, doing things for the most part as God intended—and then all of a sudden something snaps and we fly off the handle and do some fool thing that ought never to be done.

Some of us hit the jug while some of us lower our moral standards in other ways. Some of us take it out in acting mean to those we love, while some of us just sulk and have nothing to do with anybody or anything. And all without any particular reason.

Perhaps none of us will ever be able to outsteady this thing of living, but don't you think we could do a lot better if we'd try harder? Let's hit that ball back and forth a little longer next time before we tire of the steadiness of things. To weary of living as a man should live just doesn't make sense when you stop to think about it.—*Mail Tips.*

A MEDICAL STUDENT AT SEVENTY

Henry Franklin Cutler was born in 1862 in Greenwich, Mass. He was graduated from Amherst College, took postgraduate work in Paris, Geneva, and Berlin, and was instructor in languages at the State Normal School, West Chester, Pa., in 1889 and 1890. Then for nearly 40 years he was principal of Mount Hermon Boys' School in Massachusetts. He retired at the age of seventy and started on a trip around the world, still imbued with his boyhood ambition to be a physician. In Paris, he decided to matriculate in a medical school. In July, 1940, in his seventy-ninth year, according to the *Mount Hermon Alumni News,* the University of Vienna officially announced that he was "promoted to the degree of doctor of medicine."—*The Diplomate.*

Obstetric Hazards in Pennsylvania

JAMES S. TAYLOR, M.D.
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THE title of this paper was prompted by the information gleaned from the maternal mortality survey which has been conducted in Pennsylvania over the past 5 years. This work has made many demands on the county maternal welfare committees and it is their work that is here presented. They have rendered valuable services to the profession of Pennsylvania, and the improvement noted in lowering maternal mortality is partly due to their efforts in analyzing all such deaths, thus sensitizing our fellow practitioners to whatever weaknesses may be present in obstetric care in our state. Our profession is fortunately comprised largely of the progressive type of individual, who is not merely satisfied at being called a physician, but wants to be recognized as a person of integrity and diligence and as one who is always willing to progress, learn, and be of real service to the lay public. This maternal mortality survey clearly shows that the practitioners of our state are imbued with the spirit of assiduously exerting themselves for their own improvement and for the betterment of their service to the lay public. No physician relishes the "living over" again of his obstetric accidents and the catastrophes that have passed through his hands, but the conscientious physician throughout this survey has willingly relived his cases, hoping in this way to improve his work and that of his fellow practitioner, all of which will accrue to the benefit of the pregnant woman of the future.

Thanks are herewith extended to all the workers in every county of our state and to all the practitioners who were so willingly co-operative. Here are some of the gleanings of this work, your work, and may its presentation further inspire and stimulate you and all of us to still better obstetrics.

By "hazard" is meant a risk, danger, or peril. Such hazards unhappily are present in all obstetric patients, some can be thwarted rather readily, some can be averted entirely, while with some it is most persistently difficult to weather the storm they create. It is not the intention of the essayist to cover in detail all the hazards besetting the pregnancy state, but more might be gained by presenting the outstanding or most prevalent hazards that are met with in Pennsylvania. Even the most adequate and meticulous ante partum care will not prevent some of the serious complications, but it at least gives the physician the time and opportunity to diagnose and treat them before they pass over into the serious state.

The statement in regard to affording the physician an opportunity to deal promptly and properly with any beginning aberrations from normalcy is predicated by the truth that the patient must present herself for such care, and herein lies much of the cause for unnecessary maternal deaths. The lay public is still woefully dilatory in asking for even a moderately fair degree of adequacy of ante partum care; whether this is from ignorance, misinformation, or what, the fact remains that there is not the insistent demand for ante partum care that should exist in this day and age of public enlightenment and medical knowledge presented to the public through the press and radio. The profession individually and collectively for the past 20 years has been advocating ante partum care and in spots much has been accomplished, but in other localities much still remains to be hoped for.

There were 165,984 live births in Pennsylvania in 1938; 99.1 per cent of these births were attended by physicians and 54.9 per cent of the babies were delivered in hospitals. In 1939 there were 161,043 live births (a drop of 4941), and figures for professional attendance and hospitalization are comparatively similar to those of 1938.

This drop in the birth rate will no doubt be taken care of during this and the coming few years through increased employment, war mobilization plans, etc.; still any decline in our nation's birth rate is an alarming factor, for to progress and exist as "the one nation in the world to carry on civilization," we must not have a shrinking or stationary birth rate. Further-

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Read before the Section on Obstetrics and Gynecology of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

Dr. Taylor is chairman of the Commission on Maternal Welfare of The Medical Society of the State of Pennsylvania.

more, our professional responsibility for preserving and conserving maternal and child lives is far greater with a lowered birth rate. Competing, aggressive nations have their ways and means of preventing a stationary birth rate; we can answer all such challenges by conserving and preserving our mothers of the present day and those of the oncoming generation. Mothers are the backbone of a nation, hence our professional efforts for conserving them is not only a medical problem but a national problem.

Table I shows clearly that there has been a drop in maternal deaths over the past 5 years. In 1934 there were 900 mothers who succumbed to conditions incident to pregnancy and childbirth, a death rate of 5.8 per 1000 live births. This rate has been dropping yearly; in 1935 the rate was 5.5, in 1936 it was 5.2, in 1937 it dropped to 4.8, in 1938 to 3.9, and last year (1939), the lowest it has been, viz., 3.1 per 1000 live births, which represents 517 maternal deaths, almost 50 per cent of what it was 5 years ago. However, many of these 517 deaths of last year, as of each preceding year, were entirely avoidable or preventable deaths, and it is these that we must reduce to as near zero as it is humanly possible to do.

The 4 outstanding or leading causes of maternal mortality are (1) the toxemias of pregnancy, especially the eclamptic type, (2) septicemia, (3) obstetric hemorrhages, which comprise placenta previa, abruptio placentae, and postpartum hemorrhage, and (4) abortions, aseptic and otherwise.

TABLE I

PENNSYLVANIA MATERNAL DEATH RATE

Year	*Live Births*	*Maternal Deaths*	*Maternal Death Rate per 1000 Live Births*
1934	160,238	900	5.8
1935	161,166	883	5.5
1936	159,393	830	5.2
1937	161,288	776	4.8
1938	165,984	634	3.9
1939	161,043	517	3.1

Table II shows the figures as gathered for 1939, with the late toxemias of pregnancy (here referred to as eclampsia) as the main contributor.

Table III shows most interestingly the change in position of these 4 maternal death factors.

Abortion was the leading cause of death in 1935, followed by sepsis, hemorrhages, and eclampsia; in 1936 sepsis took first place, and since 1937 it is shown that eclampsia is out in front as the main cause of maternal deaths; in other words, eclampsia has been gaining ground as the leading contributor. It has shown no signs of relinquishing its leadership during the past 3 years and in 1940 it still paces the others.

TABLE II

OUTSTANDING CAUSES OF MATERNAL MORTALITY IN 1939

Total live births		161,043
Maternal deaths		517
Death rate		3.1 per 1000 live births
Eclampsia	110	22.2%
Septicemia	53	10.2%
Abruptio placentae	51	9.8%
Abortion (all types)	73	14.1%
Ruptured uterus	11	2.1%

Table II gives only the outstanding causes producing maternal deaths, there being 110 maternal deaths, or 22.2 per cent from eclampsia. This is the condition that, by and large, our ante partum care should keep in the background or in a less conspicuous position than first place. To attempt a complete analysis of why eclampsia or the toxemias of pregnancy are in the leading rôle would necessitate an investigation of not only the professional care of these toxemic patients but most certainly an economic and social appraisal, the latter of which is beyond our uneconomic and unsociologic training. But, we can evaluate the factors dealing with the professional angle of this state of affairs, and accordingly there are gathered together data from 168 toxemic (mostly the eclamptic type, and none of the early toxemias) deaths which have been reviewed and analyzed by the county maternal welfare committees. These are here compiled in an effort at finding out the weak links in this chain of events.

Table IV shows various factors contained in these 168 toxemic deaths, outstanding among which is the fact that 76 or 44.6 per cent of these fatal cases had no ante partum care of any description or manner, and 35 had what is termed as poor care. The enormous preponderance of cases receiving no ante partum care surely is a matter of grave concern. How many of these could have had their deaths postponed? When one observes the number who were first seen by any physician only after convulsive seizures had set in (37, or 22 per cent), then one must realize that ignorance or apathy on the part of the lay public is largely responsible for such a condition. Surely the profession cannot by any stretch of the imagination be held responsible or accountable for such deaths. In evaluating the treatment accorded these 168 toxemic patients, there were 56 cases treated conservatively and 29

TABLE III

POSITION AND PERCENTAGE OF 4 LEADING MATERNAL DEATH FACTORS

	1935	*1936*	*1937*	*1938*	*1939*
Abortion (all types)	(1) 21.8	(2) 15.6	(2) 17.6	(2) 17.6	(2) 14.1
Sepsis	(2) 19.8	(1) 23.0	(3) 13.4	(4) 11.9	(4) 10.2
Obstetric hemorrhages	(3) 12.3	(4) 11.8	(4) 11.5	(3) 13.2	(3) 13.5
Eclampsia	(4) 10.8	(3) 15.2	(1) 19.5	(1) 21.8	(1) 22.2

Open figures—percentage. Bracketed figures—position.

radically, with not enough data on 23 reports to definitely classify the treatment.

Thus far in our study we note two factors; namely, 44.6 per cent had no ante partum care and 22 per cent were in convulsions when first seen by any physician. The majority of these toxemic patients were primigravida.

TABLE IV

168 ANALYZED TOXEMIC DEATHS

Ante partum care		
No record	20	
None	76	
Poor	35	
Inadequate	15	
Adequate	22	
		168
Treatment		
No record	23	
Inadequate	23	
Conservative	56	
Radical	29	
In convulsions or moribund when first seen by physician	37	
		168
Gravid		
No record	38	
Primigravida	62	
II gravida	15	
III gravida	14	
IV gravida or more	39	
		168
Responsibility		
Unable to assign	58	
Patient and/or family	68	
Physician	28	
Both physician and patient	11	
Chiropractor, osteopath (one each)	2	
Midwife	1	
		168
Hospitalized		
Early after convulsions	17	
Late	54	
Moribund on admittance	56	
		127
Multiple pregnancy		
Twins	9	
Undelivered		25
Interval between delivery and mother's death		
No record	36	
Within first 24 hours	70	
Within second 24 hours	8	
Within third 24 hours	9	
In fourth day or above	20	
		143
		168
Cesarean section		
Gravid:		
Primigravida	20	
II gravida	4	
III gravida	3	
IV gravida	2	
V gravida	1	
		30
Relation to convulsions:		
No convulsions	21	
During convulsions	9	
		30
Postmortem section	6	
Assigned cause of death		
Unable to classify	18	
Toxemia per se	98	
Circulatory failure	10	
Urinary suppression	8	
Postpartum hemorrhage	7	
Cerebral hemorrhage, embolism, or edema	6	
Pulmonary edema or embolism	9	
Associated with abruptio placentae	4	
Peritonitis	4	
Acute yellow atrophy of liver	1	
Coronary occlusion	1	
Acute gastric dilatation	1	
Post-section paralytic ileus	1	
		168

In attempting to place the responsibility for these toxemic deaths, recorded data showed that in 68, or 40 per cent, the patient or family was entirely responsible, and in 28 cases, or 16.9 per cent, there was lack of judgment, delayed treatment, or improper conduct of case, all attributed to the physician; 11 cases showed evidence against both patient and physician.

In the matter of hospitalization of toxemic patients, data glaringly showed that 54 were admitted late in the condition and 56 were actually moribund when sent to the hospital. Experience definitely shows the enormous value of early hospitalization of any toxemic patient, by which she can receive adequate, proper, and thorough treatment.

There were 9 cases of twin pregnancy. There were 25 patients who died undelivered. The majority of those delivered died in the first 24 hours, and there were 6 postmortem sections in an attempt to get a living baby. Thirty cases were sectioned and 20 of these were primi-

TABLE V

CESAREAN DEATHS IN PENNSYLVANIA

January, 1935, to January, 1940

(Data from Death Certificates)

	1935	*1936*	*1937*	*1938*	*1939*
Section performed because of pelvic architecture being sole indication	38	36	50	53	53
Section performed because of					
1. Placenta previa	6	5	4	2	4
2. Abruptio placentae	4	4	10	4	5
3. Eclampsia	10	4	12	11	16
4. Heart disease	1	0	1	1	0
5. Fibroid	0	1	2	1	0
6. Ruptured uterus	0	1	2	1	0
Total	60	50	79	72	78
Total maternal deaths	883	830	776	634	517
Percentage of cesarean section deaths	6.7%	6.0%	10.0%	11.4%	15.0%

gravidae. Cesarean section was performed in 21 cases showing no convulsions, and in 9 the section was performed before the convulsions were controlled or had abated.

In evaluating the data as to the actual cause of death of these 168 toxemic patients, the toxemia per se could be definitely held responsible in 98 cases, or 58.3 per cent.

What valuable lessons are possible from this study of toxemic deaths? Beyond any question of doubt the following points are given us: first, a woeful lack of ante partum care; second, a nonunderstandable delay in hospitalizing toxemic patients, by which delay prompt, efficient, and proper care could not be given; and third, a somewhat higher incidence of radical treatment, as cesarean sections done on patients with severe toxemia, accouchement forcé, forced labor, rapid delivery, absence of heavy sedation, disregard of the value of venesection and conservative treatment. Statistics most definitely show that conservative management of these toxemic patients shows far better results than by radical measures. In these crises oftentimes it takes more than ordinary will power to abstain from being radical, especially when demands from family or friends become more and more insistent in endeavoring to overthrow an honest obstetric conscience.

In analyzing maternal deaths, county by county, certain conditions repeatedly call one's attention to either their frequency, their treatment, or some other phase. A frequency of occurrence is noted in cesarean section deaths, and it is only natural to try to find out from the case studies if cesarean section is not responsible for many maternal deaths, because of the disregard of the various factors which make it a safe or nonsafe procedure. Accordingly, the essayist picked out 150 maternal deaths in which cesarean section was a leading factor.

Table V shows the number of maternal deaths for the years 1935 to 1939 in patients on whom cesarean section was performed. These figures were gathered from the data given on the standard death certificates and not after analysis by maternal welfare committees, hence there will be a discrepancy in the total number of sections in the several tabulations.

The main point revealed from a study of Table V is the gradually increasing percentage of cesarean section deaths year by year—from 6.7 per cent of all maternal deaths in 1935 to 15 per cent in 1939. This table does not break down the cases completely, as there is often a variance in the cause of death as given on the death certificate and that found after case study or analysis; hence a more truthful picture is obtained from the analyzed studies and this is presented in Table VI.

Table VI gives a fuller analysis of cesarean section deaths after the cases were analyzed by the various county committees. These are not all the cases that have been sectioned, but this study can be used as a cross-picture of cesarean section in Pennsylvania. This table has been arranged as to type of section, indication for section, and analyzed cause of death. To completely evaluate the material in this table would require a volume of no mean size, hence only the high points can be considered.

First in consideration is the high incidence of the classical section over the safer low cervical section, viz., 75.2 per cent for the classical against 8.6 per cent for the low cervical. Does this not again raise the question: Why so many

TABLE VI

150 ANALYZED CESAREAN SECTION DEATHS

	Classical		Low Cervical		Porro		Unclassified		Total
	Elect.	Emerg.	Elect.	Emerg.	Elect.	Emerg.	Elect.	Emerg.	
Indication									
Disproportion	11	16	1	4	0	2	1	3	38
Late toxemia or eclampsia	9	18	0	0	0	0	0	0	27
Abruptio placentae	0	16	0	1	0	2	0	2	21
Placenta previa	2	8	1	1	0	0	1	3	16
Ruptured uterus (or threatened)	0	6	0	0	0	1	0	1	8
Malposition	1	5	0	1	0	0	0	2	9
Cardiac condition	5	2	0	0	0	0	0	0	7
Prolonged labor	0	4	0	1	0	1	0	2	8
Previous section	1	1	0	0	0	0	0	1	3
Rigid cervix	0	2	0	1	0	0	0	0	3
Failure to deliver per vagina	0	0	0	1	0	0	0	1	2
Monstrosity	0	1	0	0	0	0	0	0	1
Pulmonary tuberculosis	1	0	0	0	0	0	0	0	1
Tuberculous peritonitis	0	0	0	0	0	1	0	0	1
Prolapsed cord	1	1	0	0	0	0	0	0	2
Acute appendicitis at term	0	1	0	1	0	0	0	0	2
Premature ruptured membrane	0	1	0	0	0	0	0	0	1
	31	82	2	11	0	7	2	15	150
Cause of Death									
Late toxemia or eclampsia	1	13	0	0	0	0	0	0	14
Hemorrhage	0	16	0	1	0	1	0	2	20
Peritonitis	8	24	2	9	0	4	0	6	53
Acute cardiac failure	5	5	0	0	0	0	0	2	12
Paralytic ileus	4	4	0	0	0	0	1	1	10
Postoperative pneumonia	3	6	0	0	0	0	0	0	9
Pulmonary embolus	2	6	0	0	0	0	1	1	10
Shock	2	3	0	1	0	2	0	2	10
Suppression of urine	1	3	0	0	0	0	0	0	4
Cerebral hemorrhage	1	1	0	0	0	0	0	0	2
Pulmonary edema	1	1	0	0	0	0	0	0	2
Acute gastric dilatation	2	0	0	0	0	0	0	0	2
Not stated	1	0	0	0	0	0	0	1	2
	31	82	2	11	0	7	2	15	150
	20.6%	54.6%	1.3%	7.3%					
	75.2%		8.6%						

cesarean section deaths? This logical question is answered by a consideration of the class of section carried out, whether it was an elective or an emergency procedure. The table clearly shows the figures of the classical section being used as an emergency procedure in 54.6 per cent of all cesarean section deaths (150), and as an elective procedure in 20.6 per cent of such cases. Repeated observations and many presentations over the past 10 years have been most insistent in asserting that the classical (Saenger) section is a comparatively safe procedure only as an elective one.

A glance at Table VI further brings sharp attention to the fact that the low cervical section was used as an elective procedure in 1.3 per cent of these cesarean section deaths, and in 7.3 per cent of such cases it was carried out as an emergency procedure. There were 2 maternal deaths out of the 150 on whom the low cervical section was done as an elective procedure, against 31 of the classical type. The low cervical section is a much safer procedure, it can be used after labor has been tested, it shows less liability to rupture in subsequent pregnancies, and it can be considered moderately safe in potentially infected cases, whereas the classical type should be used only as a true elective procedure.

In 1938 the essayist reviewed the cesarean section picture of Allegheny County for 1935, 1936, and 1937. Here are some of the facts: There were 1107 cesarean sections performed in the 3-year period, with a maternal mortality of 42 (3.9 per cent); a section was performed in 11.5 per cent of all the maternal deaths for that period; 73.6 per cent of the sections were of the classical type with 25.8 per cent emergency; 24.2 per cent of the sections were of the low cervical type, with 43.2 per cent emergency and 56.8 per cent elective in classification; 73.7 per cent of the cesarean deaths were in the classical type with 42.8 per cent of these allotted to the emergency classification. But, only 4.7 per cent of the cesarean deaths occurred when the low cervical section was done, with all these in the emergency classification and no deaths in the elective classification.

Analysis of cesarean section deaths shows that a proper appreciation of the value of the different types of section is not present throughout the state. Each type has its limitations, but these are not strictly adhered to by the operators throughout our commonwealth. Will not the picture here presented produce a fuller appreciation in the future of the proper field for the various types of section? It is hoped so, for then our committees will not have worked in vain. In short, the classical section should be only a purely elective procedure, the low cervical could be used as an elective, but it should be the method in emergency sections even if potentially infected, while the Porro section is reserved for the frankly infected cases. These limitations should not be difficult to adhere to. Studies show that nonobstetrically minded surgeons as sectioneers are the chief offenders in this matter.

It is utterly impossible to present all the hazards of obstetrics and this paper merely attempts to bring to light of day the leading factors for consideration. Due consideration should be devoted to the hemorrhages, the too frequent deaths from ruptured uteri, the facts of septicemia and other conditions, but space forbids; hence this material is only a partial covering of the problem and must not be considered as all-inclusive of the various factors.

There is appended herewith, for your perusal, data on case reports from our county committees, which might be printed under the heading, "It Can't Happen Here," but here it is shown that it can, believe it or not:

Case Reports

CASE 1.—Primigravida, full term, 48-hour labor, membranes ruptured 1 hour, forceps delivery attempted, admitted to hospital, temperature 102 F., Bandl's ring, Porro section; died on fifth day from peritonitis.

CASE 2.—Gravida V, age 34, profuse bleeding near term, rapid feeble pulse, air hunger, cervix closed, no uterine contraction. "Only hope of saving mother or child was cesarean operation." Mother died on table; baby could not be revived. "No time before operation for transfusion." Diagnosis, abruptio placentae, and had been packed.

Comment: No time to transfuse, but time to section.

CASE 3.—Primigravida, age 22, adequate number of ante partum observations. Emergency classical section 48 hours after membranes ruptured; many vaginal examinations; hydrocephalic baby. Died on nineteenth day from peritonitis. Given prontylin, 5 grains 3 times a day.

CASE 4.—Primigravida, age 25; attempted forceps at home; admitted to hospital with marked trauma, discoloration, and edema of vulva; absolute pelvic contraction; head floating; catheterized specimen gave bloody urine; uterus tightly molded over fetus; very rapid pulse; in labor 66 hours, temperature 102 F., extensive laceration of cervix from forceps; extraperitoneal section; died on third day from peritonitis.

CASE 5.—Primigravida, age 27, full term, 24-hour labor, 4 vaginal examinations outside; admitted to hospital where, 4 hours after artificial rupture of membranes, forceps were applied to right occipitoposterior and episiotomy done. Bandl's ring discovered, and emergency low cervical section carried out; mother died on fifth day from peritonitis.

These case notes were taken directly from forms returned after analysis of maternal deaths by the members of various county maternal welfare committees.

So, to attempt to place all the blame on the lay public is not fair, for the profession must assume, whether it cares to or not, some of the responsibility for some of the maternal deaths. Only by continuing to present data, figures, and true pictures of the status quo can it be hoped that the professional blame can be eradicated. The lay public similarly must be educated away from all the beauty and serenity of painless childbirth, twilight sleep, or what you may call present-day society-approved obstetrics. Physicians are not entirely responsible for this demand for easy labor, but our many lay publications delight in filling the minds of the gullible public with unauthorized, misinforming articles on child-bearing, and because of this state of affairs many a physician has to do economically what he honestly and conscientiously dislikes to do.

In conclusion, let it be mentioned that there has been one splendid advance made in our state the past year through legislation requiring premarital and prenatal blood tests for syphilis. Both of these should be a vital help towards eliminating syphilis. Obstetrically minded physicians welcome the prenatal requirement, for by this means alone and its publicity throughout the state by the press there should be noted an increase in cases reporting for ante partum care, thus giving the practitioners of Pennsylvania a splendid opportunity to render better service through conscientious ante partum care. The public is most happy over this legislation and physicians generally are wholly co-operative. Syphilis is a real obstetric hazard and only by early recognition and efficient treatment can its dangers be eliminated.

ABSTRACT OF DISCUSSION

JOHN COOKE HIRST (Philadelphia): As chairman of the Commission on Maternal Welfare of our State Medical Society, Dr. Taylor has had unusual opportunity to observe and interpret state-wide obstetric progress, and has brought to light significant shortcomings among both patients and physicians in spite of notable general improvement.

Of the major causes of maternal death in Philadelphia—in order of frequency, septic abortion, puerperal septicemia, eclampsia, and hemorrhage—the death rate from abortion in 1939 was only one-third that of 1931, so that our present attack on this complication centers chiefly on reducing illness time by means of judicious uterine evacuation.

Undoubtedly, puerperal septicemia should be reduced much further by increased utilization of the low cesarean section or by hysterectomy. The so-called low classical section is still a high operation, so that it is preferable to adopt the Kerr or the Beck technic for all elective situations rather than to detour upwards even for a low placenta or a thick lower segment. Also, a woman is either infected or she is not. We feel strongly that the various extraperitoneal procedures suit only the early intrapartum infections, and only an "exteriorized" Porro cesarean operation properly protects the neglected cases. Due attention to predisposing causes of sepsis (weakness, hemorrhage, time of rupture of membranes, degree of cervical dilatation), activating causes (trauma), and exciting causes (bacteria, especially respiratory) will indicate the choice of procedure in every instance.

It is difficult to understand the Pennsylvania increase and the Philadelphia status quo of eclampsia deaths in view of increased hospitalization and ability to cut the death rate from 20 per cent to 5 per cent under simple therapy. This involves nothing but generous intramuscular barbiturate sedation with magnesium sulfate and hypertonic sucrose or dextrose intravenously or by nasal tube, oxygen, and if need be, a spinal tap, delaying any operative intervention until after thorough bowel evacuation via fractional epsom salts, by which time the mother will probably be much improved and the baby delivered. Compulsory serologic tests will no doubt bring in more women for prenatal care, but decentralized maternal health centers in hospitals with more public health nurses and doctors will gather up the rest.

A recent patient now recovering on our service in the Philadelphia General Hospital is an example of what often happens here: She was a Para XIV, had all deliveries at home, and never had prenatal care. She had 2 convulsions beforehand, and was 100 per cent unco-operative, not to mention belligerent, after a late admission.

Concerning hemorrhage, only about one-third of the fatal cases were transfused up to last year; consequently, ante partum or intra partum bleeding of any moment indicates compatible blood on hand. As to the fertile third stage, no woman should be removed from her sterile delivery condition until the placenta is completely out, even if manual extraction under morphine and ether or preferably vinethene anesthesia is necessary.

DR. TAYLOR (in closing): I particularly discussed eclampsia and cesarean section, because I felt the patient was responsible for one and the doctor was responsible for the other. The patients have no control over whether they have a section or not; that is for the doctor to decide, as well as the type of section done. The figures presented, which are just picked out at random from over 3000 cases, will definitely show the enormous danger in emergency classical cesarean section.

A WAR SURGEON TELLS A STORY

Dr. Robert Bárány, professor of ear and throat diseases at the University of Vienna, in 1914 was in charge of the department for head injuries at the war hospital of Przemysl, before World War I the strongest fortress in Galicia. When Przemysl surrendered to the Russians, Bárány was taken into Russian captivity. In captivity he was notified by the Stockholm Nobel Prize Committee that he had been awarded the Nobel prize in medicine for his pioneer work in the field of physiology of the brain. Thereupon the Russians released him and with great ovations took him to the Swedish frontier. Later he was a professor at the University of Upsala.

From his experiences in the war hospital at Przemysl, Bárány told of an extraordinary case, relates the *Medical Record.* Two soldiers brought in a man whom they were supporting on each side. Such aid, however, seemed quite unnecessary, as the man was walking erect, looking fresh and healthy; he merely seemed somewhat frightened. Bárány examined the man and found in his left jawbone a Russian bullet, sticking out two-thirds of its length, not with its broad lower end but with its point. It was now Bárány's turn to be frightened. The bullet had entered the man's right cheek, close to the ear. Its head had penetrated the man's head from right to left, had pierced the left jawbone, and then come to a dead stop.

Bárány touched the point of the bullet gingerly. It did not budge. It was firmly held by the bone. The affair had apparently taken a favorable course. He calmed the man, ordered complete rest, and decided to remove the bullet in a few days after the shot canal had healed. The next morning, however, the hospital manager, Dr. X, director general of the Army Medical Staff, saw the man gaily smoking cigarettes in bed and observed the bullet point sticking out of his left jaw. He ordered immediate removal of the bullet. Bárány's protests were ignored.

The man was placed on the operating table, lightly narcotized, and the necessary instruments were prepared. A young army doctor tried to loosen the bullet from the bone and he was just about to grip it with his instrument to pull it out when suddenly it disappeared. It had lost its hold and had slipped back into the shot canal which was still open, and stuck somewhere in the brain, which only the day before it had penetrated like lightning and without doing damage.

Five seconds later the man was dead.—*New York State Journal of Medicine.*

Is the action of the sulfonamides bacteriostatic or bactericidal? See page 1198.

Conservative Surgery in Diabetic Gangrene

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DURING the past one or two decades, 2 schools of thought have developed as to the proper treatment of lesions of the lower extremity in diabetics, where the diminished blood supply is an important factor in the development and progress of the lesion. The one has placed the patient's life foremost and far exceeding in value the saving of a limb; the other, though recognizing the importance of mortality, believes that saving of a limb is also of considerable interest, especially to the patient. This latter attitude seems to be in the ascendancy at present; so we are in step with the general medical trend, though running counter to local tradition which has in the main supported the first viewpoint.

The exponents of radical primary amputation in addition to the main argument of lowered mortality point out that this method of treatment shortens the hospital stay and thus is an economic saving as well. Furthermore, they say that a well-fitting artificial leg is no impediment. These last 2 arguments are nullified at the Philadelphia General Hospital where the majority of the patients have no means of obtaining an artificial limb and are supported by the state whether in or out of the hospital. Therefore, for the past 3 years, conservative surgery has been attempted on many of the cases in the diabetic wards on the services of Drs. E. S. Dillon and A. Sindoni and under the surgical supervision of Drs. E. L. Eliason and L. K. Ferguson. The facts and impressions here presented have been drawn from this experience.

Close co-operation between the internist and surgeon is more important than ever when conservative surgery is attempted. The patient's diabetes is naturally unstable for a longer period of time than when radical surgery is done with prompt removal of the focus of infection. The patients were not transferred to the surgical wards but remained on the metabolic wards at the time of operation and during their post-operative care. Insulin requirements and level of blood sugar are important guides to the amount of toxicity resulting from a local lesion. In cases of bad infection, where this is adequately drained, insulin requirements fall so rapidly that unless one is extremely cautious these patients go into insulin shock. These elderly diabetics do not tolerate shock very well and certainly this was a contributing factor, if not the most important factor, in several of our deaths.

The value of good nursing care can also not be overemphasized. The prevention of bed sores is of prime importance. We have seen patients with stumps completely healed gradually go down hill from the sepsis of a large bed sore. The present supervisor, Miss Watson, is to be congratulated in largely eliminating this complication.

Conservative surgery is not attempted on every case. In our efforts to find out what could be accomplished, the standards for eligibility for conservative surgery have been rather lax. In fact some were attempted where failure was almost certain. The justification in these cases was the patient's refusal to permit leg amputation, though we must admit at times the efforts to persuade the patient were not too vigorous. Some of the deaths following secondary amputation can be traced to patients' refusal for some days and even weeks after conservative measures had obviously failed to permit amputation and only permitting amputation when almost stuporous. A rule has been established that conservative surgery will be attempted only if permission is granted for thigh amputation if the foot fails to heal.

The ideal case is the young diabetic 40 to 50 years of age, with a good pulse and a single necrotic toe, where infection preceded necrosis. The foot was saved in 64 per cent of the cases which had a palpable dorsalis pedis pulse and in only 34 per cent of those in whom the dorsalis pedis could not be palpated. The average age at which successful attempts at conservative surgery were made was 55 years, the youngest patient being 40 and the oldest 70. The average age of failure was 62 years, with the youngest patient being 41 and the oldest 78.

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The case that gives the poorest prognosis is the old diabetic, without any pulses, with dry gangrene of a toe, and whose main complaint is pain. The pain of anoxemia is a definite contraindication to conservative surgery. The color of the foot and the appearance and texture of the skin are also valuable aids in one's evaluation of the adequacy of collateral circulation. The shiny, nonflexible skin, accompanied by the usual nocturnal pain, augurs ill for an attempt at saving the foot. Skin temperatures and the oscillometer have not been used in evaluating circulation.

Adequate preoperative preparation is necessary before any form of intervention is practiced. Emphasis had been placed on the value of emergency surgical intervention. However, analysis of results in 1937 and 1938 showed that the highest mortality occurred in those patients operated upon within 24 hours of admission. These were, of course, the poorest risks. Every effort should be made to standardize the patient before operation. The foot is elevated to aid reduction of swelling and thus improve the blood supply aiding localization of infection. In many cases sulfanilamide or one of its relatives has been used both preoperatively and postoperatively. As might be anticipated, the results from sulfanilamide have not been exceedingly impressive, as infection is only one factor in producing the lesion. Furthermore, infection is usually of a low-grade variety and the streptococcus is an infrequent invading organism. Further studies as to the value of chemotherapy in these cases is indicated. The ideal time for intervention is 3 to 5 days after admission.

Table I

Relation of Dorsalis Pedis Pulse to Success or Failure of Conservative Surgery

	Success	*Failure*
Good pulse	16	7
Palpable pulse	11	8
Not palpable	8	15
Not noted	1	2

Cyclopropane and spinal anesthesia have been used as the anesthetics in these cases. Very little difference has been noted in the end results obtained. There is definite danger in too heavy preoperative sedation. The usual dose of morphine depresses these patients tremendously and no or a very small dose of a preoperative sedative is preferable.

The usual procedure is disarticulation of the involved toe, thus removing promptly the grossly infected material from the operating field. Following this, the head of the metatarsal bone is always removed. If this is not done, the cartilage becomes infected, which necessitates further surgery. The head can be removed by a double-acting rongeur or the Gigli saw. The incision is carried back further on the sole of the foot, as recommended by Steele, to afford better drainage. The tendons are divided by a sharp knife but are not sutured to the tendon sheaths as recommended by some. Care is taken not to pull the tendons down before dividing because of the danger of carrying infection up the tendon sheaths when they retract. No sutures are placed in the wound. It was necessary to ligate a spurter in only one case. The wound is packed wide open with iodoform gauze.

Amputations in the foot higher than the one described are not satisfactory and one might as well do a mid-leg or low-thigh amputation. However, as many as 3 toes have been amputated successfully. Lesions of the heel do not respond to conservative therapy and the few cases in which débridement was tried have come to amputation of the leg. If the fever subsides, the foot is not dressed for 3 to 5 days after operation. Thereafter daily dressings are done until the wound is definitely healing. During these dressings areas of slough are excised and the foot is examined for extension of infection.

If considerable slough is present, daily soaks for one-half hour in warm, not hot, boric acid solution seem to be of benefit. Dakin's solution has also been used, but the impression is that it has no benefit. In some of these cases zinc peroxide seems to have definitely promoted granulation, or rather granulations appeared following the use of zinc peroxide. The wounds cultured showed a variety of organisms, many of them nonpathogenic. The commonest pathogens were the colon bacillus, the Staphylococcus albus, and only rarely was a streptococcus found. In cases cultured after the use of zinc peroxide there was no noticeable difference in the flora of the wound. This is presented as an impression and not as a fact, as the number of cases cultured was too small to be of much significance.

Adequate drainage is essential. Care should be taken to avoid pockets. As these patients lie with their feet elevated, there is a tendency for secretions to puddle in the back of the wound. Dr. W. Wallace Dyer has suggested that we turn these patients on their face for an hour 3 times a day to promote better drainage. This has become a routine order.

One of the most important points in practicing conservative surgery is the ability to recognize and admit failure. Many of our deaths following secondary amputation have been due to delay after conservative measures had failed. The

TABLE II

RESULTS FROM CONSERVATIVE SURGERY

	1937	*1938*	*1939*	*Total*
No. of cases ..	12	22	36	70
Successful ...	5 (41%)	10 (45%)	21 (56%)	36 (51%)
Amputated (secondary)	6	11	12	29
Died	3 (50%)	4 (36%)	8 (66%)	15 (51%)
Died without amputation.	1	1	3	5

diabetic is unable to withstand weeks of infection and many of these cases develop secondary infections elsewhere such as in the urinary tract and bed sores. How can this delay be avoided? The most reliable sign is the constitutional reaction of the patient rather than the local appearance of the wound. By constitutional reaction we mean the patient's general feeling of well-being, his temperature, and insulin requirements. If the temperature and insulin requirements do not show improvement within 5 to 7 days, an undrained area of infection is suspected, and if this cannot be discovered promptly, secondary amputation should be done without delay.

It should be emphasized that it is very difficult to tell from the outward appearance of the foot how much infection is present. We are surprised again and again by the extensive necrosis in the sole of the foot in dissecting the foot after amputation. Several times an effort was made to place the responsibility for the fever on a urinary infection because the foot appeared so benign, only to have the temperature drop to normal following amputation.

If there is any rise in temperature, the foot should be carefully inspected at the daily dressing. Special attention should be paid to the sole of the foot, and if any tenderness is present, infection in the plantar space is probable. Infection in several amputations of the large toe has first shown up on the lateral aspect of the foot, having apparently followed the course of the peroneous longus tendon.

In Table II the results of conservative surgery have been summarized. It will be seen that from 1937 to 1939 more and more cases have been treated by amputations of toes. It might be mentioned here that only cases requiring sufficient surgery to warrant sending patient to the operating room have been included. Lesions such as infected calluses, which respond to elevation and trimming in the ward, are not included. In all, 70 cases have had amputation of one or more toes and 36 or 51 per cent of these left the hospital with the foot healed. The mortality in this group was 28 per cent. The mortality in 93 cases of primary amputation was 46 per cent. However, the mortality in those cases requiring secondary amputation, except for the year 1938, was higher than in primary amputations (Table IV). This fact we hope to correct by earlier recognition of the necessity of secondary amputation. Table V summarizes the results in 168 cases which had minor or major amputations during the 3 years.

TABLE IV

RESULTS OF AMPUTATIONS

	1937	*1938*	*1939*	*Total*
Primary				
No. of cases	27	46	25	98
Deaths	9	27	10	46
Mortality	33%	58%	40%	46%
Secondary				
No. of cases	6	11	12	29
Deaths	3	4	8	15
Mortality	50%	36%	66%	51%

TABLE V

	1937	*1938*	*1939*	*Total*
No. of cases	39	68	61	168
Deaths	10	32	21	63
Mortality	25%	47%	34%	37%

It cannot be denied that the hospital stay is prolonged by attempts to save the foot. The average stay, in the 1939 group, of those in whom conservative surgery was attempted and survived was 66 days, as opposed to a 39-day stay of those surviving primary amputation. It must also be admitted that conservative surgery requires much more of the surgeon's time and effort, but he is amply repaid by the gratefulness of the patient in a successful case, especially if amputation had previously been advised at some other hospital.

In conclusion, we feel justified in attempting further conservative surgery in view of the fact that we were able to save 50 per cent of the legs in the cases attempted. The mortality in this group as a whole is lower than in those who had primary amputation, though it is slightly higher in those requiring secondary amputation. Too much emphasis cannot be placed on attention to

TABLE III

	Conservative			*Primary Amputation*		
	No. of Cases	*Deaths*	*Mortality*	*No. of Cases*	*Deaths*	*Mortality*
1937	12	4	33%	27	9	33%
1938	22	5	22%	46	27	58%
1939	36	11	30%	25	10	40%
Total	70	20	28%	98	46	46%

so-called minor details. It is our belief that the facts as presented here should be told to each patient so that he may be allowed some preference as to whether he wishes to try conservative surgery.

I am deeply indebted to Drs. Eliason and Ferguson for allowing me free rein in this work. I also wish to express my appreciation to Drs. Dillon, Sindoni, Dyer, and Sheckter for their suggestions in managing these patients and for their co-operation in taking care of the medical side of the problem.

ABSTRACT OF DISCUSSION

Eldridge L. Eliason (Philadelphia): Dr. Erb has spoken with authority on his chosen subject, as he has had a wide experience on the Metabolic Service at the Philadelphia General Hospital and has strengthened his clinical experience by anatomic and bacterial investigations.

When, in his opening paragraph, he mentioned the high amputation and its local tradition, he included me and the opinion I held until the past year or so. It might interest you to know that when he was first put in charge of the diabetic surgical cases assigned to my service he practiced what was taught until 3 or 4 years ago; namely, one amputation that was clean and free from pain, and that above the knee except in gangrene in the first or fifth toe. He soon tired of being a leg remover and asked if he might try conservative measures. This was permitted and his results speak for themselves. He has just given you a survey of how conservative treatment can save feet and legs and at the same time have a comparatively low mortality.

If we look back prior to 1926, surgery in diabetic gangrene carried a prohibitive mortality with both radical and conservative procedures because these patients succumbed to coma. After coma was conquered by proper insulin administration, our patients lived 8 or 10 years longer, and when gangrene did occur, we had a patient definitely 10 years older in every respect, i.e., kidneys, liver, heart, vessels, etc., and therefore a still poorer risk. As recently as 1930-36, although our immediate (2 or 3 days) surgical mortality was low (3 to 4 per cent), our 30-day mortality was about 40 per cent, later reduced to 25 per cent, in the hands of one surgeon as compared to that of a group of 10, due to the patient's lessened ability to withstand the long fight against prevailing odds of biochemical neglect.

During this period 50 per cent of the cases admitted did not know they had diabetes until gangrene occurred, and 81 per cent of these already had moist infected lesions. I expect, maybe, public health instruction may have improved these figures somewhat. It is only fair to say that all of the Philadelphia General Hospital cases are poor people and often neglected patients. There are no private cases included.

It was about this time, after proper diabetic control was established, that conservative surgery was done promptly with minor amputations and drainage of infections. Still our patients died too often, after 2, 3, and 4 operations ending in the mid-thigh, because we had not then fully appreciated and applied our present conceptions of patient preparation, of water balance, and balanced chemistry of infection and exhaustion, as well as that of the diabetes itself.

I believe, as Dr. Erb has shown, that the appreciation of and proper treatment in this aspect of our exhausted, dehydrated, and starved patients are responsible for the better healing that enables the surgeon to save more feet when a dorsalis pulse exists.

Dr. Erb very properly calls attention to the need for teamwork, meticulous attention to details, careful search for causes of pain, elevated temperature, anorexia, and, equally important, the employment of properly trained and conscientious nurses, as well as a surgeon interested in this disease and in the daily supervision of his cases. The employment of the prone position is excellent not only for drainage of the foot but for the benefit to the lungs and care of the back.

Dr. Erb states, "One of the most important points in practicing conservative surgery is the ability to recognize and admit failure." I would make it read "early recognition of failure." "Time marches on!" So does surgery!

NATIONAL DEFENSE AND CIVILIAN PSYCHIATRY

The nation has embarked on an extensive program of preparedness to safeguard our country from imminent dangers abroad. The medical profession has responded loyally and patriotically as it has ever done during similar emergencies. This is as it should be. However, certain critical problems have arisen in this connection in the field of psychiatry which future planning should remedy.

In civilian life the greatest number of psychiatrists are found associated with mental hospitals as full-time physicians. Most of these are engaged in county, state, and federal hospitals. They are rendering quality service, giving unsparingly their time and effort, but usually under conditions of great disadvantage. Few state mental hospitals are staffed in accordance with the minimum standards set by the American Psychiatric Association. In many institutions the ratio of physicians to patients reaches such precarious proportions as 1 to 300 or greater. This provides a meager reservoir of psychiatrists with which to meet the needs of the nation in a time of crisis. Already state mental hospitals have suffered severely from temporary loss of personnel. To what extent can we sacrifice the needs of civilian hospitals for the equally important needs of our country? The problem is made no less acute by the great difficulty in securing replacements from recent graduates from our medical colleges.

There is one lesson that is simple and clear if we are to avoid a repetition in the future and if we are to discharge our proper responsibilities. State mental hospitals must plan to meet at least minimum standards of personnel and more young physicians must be interested in this field. Positions must be made more attractive, larger salaries must be provided, and increased educational opportunities must be made available. Psychiatry has an important contribution to make and sufficient numbers of physicians must be attracted to the field. The problem of scarcity must not hamper us again when future emergencies arise.—*Mental Health Bulletin,* Apr. 15, 1941.

GALLBLADDER DISEASE

The Diagnostic Significance of Faulty Visualization by Oral Cholecystography

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EXPERIENCE with cholecystography over a period of more than 15 years has demonstrated amply the value of this procedure in the diagnosis of gallbladder disease. A study of the literature indicates that if disturbances of visualization as well as the presence of gallstone shadows are taken as evidence of cholecystic pathology, this procedure offers accurate diagnostic information in about 90 per cent of the cases. It is our belief that these reported figures suggest a higher degree of accuracy than is generally obtained. This conclusion is based upon collected gallstone cases on which operation has been done and upon clinical studies such as we are reporting, which indicate the return of normal function in a significant proportion of patients having faulty roentgen-ray visualization.

The importance of accurate gallbladder diagnosis is emphasized by recent reports of results of cholecystectomy. It seems generally accepted that operative removal of a noncalculous gallbladder is much less likely to give satisfactory results than the removal of a stone-containing gallbladder. S. G. Meyers et al. reviewed 136 cholecystectomies and found that while 83 per cent of calculus cases were benefited by operation, only 41 per cent of the noncalculus cases obtained satisfactory results. Those cases, therefore, in which the clinical picture is not typical of cholelithiasis and in which definite stone shadows are not obtained by cholecystography, require the utilization of every possible means for clarifying the diagnosis if satisfactory results are to be obtained. We have found that in addition to cholecystography, transduodenal biliary drainage with examination of the bile by an experienced microscopist is of great value for this purpose. These studies, together with a careful survey of possible associated abnormalities of other digestive organs, are usually necessary in patients suspected of having gallbladder disease. A period of medical treatment of any associated disorders such as colon stasis, irritable colon, gastroduodenitis, or peptic ulcer with periodic repetition of gallbladder studies often results in a more definite diagnosis of the cause of the gallbladder dysfunction. In many instances normal function returns. Those patients who have persistent symptoms and gallbladder dysfunction as demonstrated by roentgen ray and drainage are then referred for surgery as are those in whom cholelithiasis is definitely diagnosed.

To illustrate our experience with this program, we have reviewed the records of 37 patients followed in the Gastro-intestinal Clinic at Abington Memorial Hospital. Although this is not a large series, we believe it indicates the value of such a diagnostic approach. All of these patients had suggestive histories and nonvisualized, poorly visualized, or poorly emptying gallbladders by the double-dose oral technic;* all

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*The technic followed in these cases may be outlined as follows:

12:00 a.m.	Regular meal (this has since been modified to a fat-free meal).
12:45 p.m.	Two teaspoonfuls of paregoric.
1:00 p.m.	First dose of dye (3.5 Gm.).
6:00 p.m.	Light meal consisting of dry toast or white crackers, any fruit or fruit juice, tea or coffee without milk or cream.
6:45 p.m.	Two teaspoonfuls of paregoric.
7:00 p.m.	Second dose of dye (3.5 Gm.). Water or sweetened tea permitted. Take before retiring.
Next morning:	Breakfast limited to tea with plenty of sugar and toast. No butter, milk, or cream.

Simple salt enema taken before reporting for examination.

8:30 a.m.	Roentgen-ray plate.
8:45 a.m.	Fat meal: 6 ounces of equal parts of milk and cream.
9:45 a.m.	Roentgen-ray plate.

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From the Abington Memorial Hospital, Abington, Pa.

were subjected to at least one diagnostic biliary drainage and other indicated diagnostic and therapeutic procedures. Patients with typical roentgen-ray evidence of cholelithiasis or those with acute symptoms requiring hospitalization were not included in the group. The final appraisal of the gallbladder was made by repeated cholecystograms in most instances. Twelve patients were operated upon. A few who obtained complete symptomatic relief and had normal biliary drainage findings had not been reroentgen-rayed at the time of this report.

The original cholecystographic findings may be classified as follows: nonvisualization in 23 cases; poor visualization in 9 cases; normal visualization but faulty emptying in 5 cases. Table I indicates the final appraisal of the cases in each group. It will be noted that further study produced definite evidence of cholelithiasis in 9 instances (24.3 per cent). Seven of these patients have been operated upon; stones were present in all. In 15 cases (40.5 per cent) gallbladder function returned to normal. The remaining 13 cases (35.0 per cent) had evidence of continued dysfunction. Five of this group have been operated upon; stones were found in 2, chronic cholecystitis in 2, and in one the details were not available.

Discussion

Of these 37 cases in which gallbladder disease was suggested by the history and cholecystographic findings, more than one-third later showed normal function. Although normal roentgen-ray findings do not necessarily indicate absence of disease, we feel that the association of normal biliary drainage findings, lack of clinical symptoms, and normal roentgen-ray function is adequate evidence of relative normality. There seem to be several possible explanations of misleading roentgen-ray results: (1) faulty technic, (2) subsidence of mucosal disease of the cystic duct or gallbladder, (3) improvement in disorders elsewhere in the digestive tract which might affect gallbladder function.

1. Errors in technic are probably not uncommon in clinic outpatients. Strict adherence to a nonfat diet during the absorption period is essential. Fat may produce gallbladder contraction for as long as 6 to 8 hours after its ingestion. A longer effect may be obtained in persons with delayed gastric emptying due to ptosis, pyloric obstruction, or pylorospasm. The occurrence of nausea and vomiting or diarrhea may also vitiate the test, although this is probably less frequent with the repeated dose procedure. Some believe that even the odor of certain foods produces sufficient gallbladder emptying to interfere with visualization.

Table I

Cases with Abnormal Cholecystograms

(Not including positive stone shadows)

Nonvisualized: 23 cases		
Final diagnosis:		
Stones	7 cases	(5 operated upon—stones in all)
Continued disease	8 "	(4 operated upon—stones, 2; cholecystitis, 2)
Return to normal	8 "	(5 normal cholecystograms; 3 not roentgen-rayed—normal drainages)
Poorly visualized: 9 cases		
Final diagnosis:		
Stones	2 cases	(2 operated upon—stones)
Continued disease	4 "	(1 operated upon—details not obtained)
Return to normal	3 "	(2 normal cholecystograms; 1 not roentgen-rayed—normal drainage)
Faulty emptying: 5 cases		
Final diagnosis:		
Stones	0 cases	
Continued disease	1 "	
Return to normal	4 "	

Technical errors in the roentgen-ray laboratory are less likely to produce difficulty, although correct exposure is important. Eradication of intestinal gas may be necessary in some instances; the use of pitressin is often of great value.

A technical error on the part of the clinician is to expect normal gallbladder visualization in the presence of extensive liver disease or during the course of obstructive jaundice.

2. It seems reasonable to assume that the mucosa of the biliary tract is subject to varying degrees of inflammatory changes similar to those seen in the upper respiratory tract and elsewhere. Those who have had experience with biliary drainage are convinced that transient catarrhal cystic duct obstruction may occur and that catarrhal cholecystitis and cholangitis may interfere with function for possibly very transient periods. Not uncommonly repeated drainages will show evidence of catarrhal inflammation with reappearance of B or gallbladder bile when the sediment decreases. This is the usual course of events in subsiding acute catarrhal jaundice. Experimental animal work has shown great variations in the absorptive and secretory functions of the gallbladder during and following acute inflammations. These changes may return to normal upon subsidence of the acute

disease. Permanent dysfunction does not necessarily follow.

3. Other digestive tract disorders may affect gallbladder function. Delayed gastric emptying has been mentioned. A. C. Ivy and L. Goldman have shown that the contact of acid gastric juice on the duodenal mucosa results in the production of cholecystokinin, which produces gallbladder evacuation. This may be a factor in the rather frequent nonvisualization of the gallbladder in duodenal ulcer. Several writers have noted a relationship between gallbladder function and colonic disturbances. F. H. Lahey and S. M. Jordan report a return to normal of 44 per cent of their nonvisualized gallbladder cases after a period of colon therapy. Ivy and co-workers found that colonic distention resulted in decreased secretion of bile in dogs. From duodenal drainage observations we feel that duodenitis frequently interferes with normal gallbladder function and that subsidence of this condition may be followed by return of normal gallbladder visualization and emptying.

An analysis of the possible factors contributing to the disturbed function in the cases which returned to normal has not been attempted in this report.

An additional source of error in cholecystography is failure to demonstrate calculi in a normally visualized organ. This probably occurs in from 5 to 10 per cent of stone cases. In this group, biliary drainage may be of great value. The finding of cholesterin crystals or calcium bilirubin pigment or both in drainage bile is very suggestive evidence of the presence of calculi.

In 1931 H. L. Bockus and others, including one of us, reported studies on 148 proved gallstone cases. Evidence of stone was found in 83 per cent by drainage, while definite stone shadows were shown in only 29 per cent by cholecystography. It also was found that a normal cholecystogram without stone shadows was present in 11.6 per cent of these proved stone cases. Drainage evidence of stone was obtained in 97 per cent of the functioning cases. These findings satisfied us that under certain conditions biliary drainage was superior to cholecystography in the diagnosis of gallstone disease. This procedure is of value, however, only if certain criteria are met: (1) A standard technic must be followed. (2) The bile must be studied by a trained microscopist. In addition to this, repeated drainages may be required to produce positive evidence of calculi; negative findings are not reliable evidence of the absence of stones.

Under these conditions, in our experience, the finding of cholesterin crystals or calcium bilirubinate pigment or both in any bile specimen is indicative of gallstone disease in from 80 to 95 per cent of cases. In the present series 9 cases were diagnosed cholelithiasis by this means. The roentgen ray had not shown direct evidence of calculi in any. Seven have been operated upon with verification of the preoperative diagnosis in all.

Because of the rather frequent occurrence of misleading cholecystographic findings in outpatients when using the oral technic, we feel it should not be used as the only criterion in the diagnosis of gallbladder disease. A complete diagnostic survey is usually indicated. Biliary drainage in experienced hands may be of great assistance in arriving at a correct diagnosis, particularly in stone cases.

Summary

1. Correct gallbladder diagnosis is essential if satisfactory therapeutic results are to be obtained.

2. Oral cholecystography is not an entirely reliable diagnostic procedure.

3. In a series of 37 cases showing abnormal cholecystograms but without definite stone shadows, 24 per cent were later diagnosed by biliary drainage as having calculi. This diagnosis was confirmed in 7 patients operated upon.

4. Forty per cent of these cases with faulty roentgen-ray visualization later showed normal function without calculi.

5. Continued dysfunction by drainage and roentgen ray is practically always due to extensive cholecystic disease; frequently stones are present.

6. The possible causes of faulty visualization by oral cholecystography other than extensive gallbladder disease are briefly discussed.

7. Biliary drainage in experienced hands offers valuable assistance in the diagnosis of cholecystic pathology. This is particularly true in gallstone disease.

ABSTRACT OF DISCUSSION

Stanley D. Conklin (Sayre): We have just listened to a very complete and practical presentation dealing with the various procedures at our disposal for the study of the patient who presents the problem of gallbladder disease. In general, I thoroughly agree with all the main points emphasized in the paper. In many instances the clinical picture is so obvious that the diagnosis of gallbladder disease is unquestionable. Again, the absolute proof of existing cholecystic involvement is difficult to establish and demands a careful investigation with all the various methods of examination and thoughtful interpretation of the results of these studies, together with the clinical picture, in order to arrive at a proper differential diagnosis.

Fifteen years have now passed since the introduction of cholecystography, a great addition of inestimable value to our diagnostic armamentarium. During this time much has been learned about the interpretation and clinical application of the evidence obtained by cholecystography. Like any test, it is not 100 per cent perfect. In my opinion, the errors seem to be greatest in those cases in which there is either poor or faint visualization, and less in nonvisualized cases. I believe also that normal visualization of the gallbladder by the dye revealing normal filling and emptying time in the presence of a good history of cholecystic disease should not be taken as positive proof that the biliary passages are normal. It is in these 3 groups of cases (I am in accord with the conclusions of the essayists) that biliary drainage, with careful examination of the specimens by some one thoroughly trained in this work, repetition of the cholecystograms, and proper consideration of other abnormal conditions elsewhere in the digestive tract that might produce gallbladder dysfunction, will result in more accurate diagnosis and satisfactory treatment. It is interesting to note that by following such a procedure over one-third of the 37 cases reported in the paper returned to normal function. I agree with the advice that any patient whose symptoms and roentgen-ray findings are questionable as to the degree of gallbladder pathology present should be observed and treated medically until such time as it is evident that surgery is absolutely indicated for relief.

I cannot emphasize too strongly the importance of meticulous care as to all details in preparing the patient for gallbladder roentgen ray. A flat film of the gallbladder region before giving the dye is advisable because any confusing shadows may be better identified later. We find the use of pitressin in those cases having considerable intestinal gas, provided the patient has no cardiac trouble, is of distinct value in securing better films. The roentgen-ray films should be interpreted by one with mature judgment in this work.

The value of transduodeno-biliary drainage as a diagnostic aid has not been given enough consideration. Obviously, it is a refined method for the diagnosis of gallstones. Because of some of the technical difficulties of the examination, it apparently has not been utilized as routinely or generally as cholecystography in the investigation of patients presenting the problem of gallbladder diagnosis. The authors emphasize the necessity for strict adherence to a definite technic for the procedure if the results are to be dependable. Unless one has had a great deal of experience in microscopic study of bile specimens, he may not detect the cholesterin crystals or calcium bilirubin pigment. I wish to re-emphasize the necessity of having the bile specimens centrifuged and then submitted to some one who is well trained, conscientious, and who from experience has learned to identify the various elements of importance. I have used the test frequently in the atypical cases, as well as in the patients having a good calculus history, yet normal visualization, and find it positive for calculi in a high percentage of the patients.

Finally, it is my belief that, in order to advise the patient with gallbladder disease correctly about the proper treatment, we must carefully correlate the history, physical findings, roentgenologic studies, and other laboratory reports. Treatment should never be based exclusively upon the cholecystographic report. If the clinical indications of a diseased gallbladder are stronger than the evidence from special studies, then the clinical findings should form the basis of the diagnostic decision.

NURSES NEEDED FOR THE GOVERNMENT

As a part of the National Defense Program, the government months ago began preparation to meet an anticipated need for an unusually large number of nurses, both in its military and civil services. The United States Civil Service Commission has announced open continuous examinations to secure nurses, but despite these examinations, there is a continuing acute shortage of nurses for the civil service positions.

The shortage is particularly noticeable with respect to some parts of the country. From some of the states very few nurses apply for the civil service examinations.

From all parts of the country, floods of inquiries are coming into Washington from women who ask how they can serve their country in the present emergency. The word to nurses is that the nursing branch of the service is one that is vital to the success of the National Defense Program. The nurse examinations open the way to an opportunity to render patriotic service, and at the same time to serve in interesting and satisfying work. There is an opportunity for advancement, and the government provides for retirement, for superannuation, or disability.

A large staff of nurses is employed regularly in the civil service—principally in the U. S. Public Health Service, the Indian Service, and the Veterans' Administration. They serve in hospitals and other medical centers throughout the United States and in the Panama Canal Zone and Alaska. Public health nurses carry on field work of community-health care and education, giving home care to the sick, class work in home hygiene, etc., principally in the Indian Service and the U. S. Public Health Service. In the more remote regions these nurses render first aid, and they even give emergency medical treatment in the absence of a physician. There has been an increased demand for public health nurses under the U. S. Public Health Service in extra-cantonment zones and where large defense industries are located.

Two examinations are now open for receipt of applications. One—Announcement No. 38—under the title of "Public Health Nurse," $2000 a year, and "Graduate Nurse," $1800 a year (for general staff duty), is open for the U. S. Public Health Service and the Indian Service, including Alaska. This is an "unassembled" examination: Applicants are not given a written test but are rated on their professional training and experience as shown in their applications and by other evidence. The other—Announcement No. 100—under the title of "Junior Graduate Nurse," $1620 a year, is for the U. S. Public Health Service, the Indian Service, and the Veterans' Administration. This examination now includes a written test. It is expected, however, that it will be closed soon and reannounced as an "unassembled" examination. The Civil Service Commission does not expect to require a written test of persons who have already filed their applications but who have not been given the test.

The need for nurses is immediate. Apply now for further information at the office of the Secretary, Board of U. S. Civil Service Examiners at any first-class or second-class post office, or write to the U. S. Civil Service Commission, Washington, D. C.

The Diagnosis and Management of the Most Frequent Subacute Perforations of the Abdominal Viscera

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THE word *perforation* is frequently omitted or incorrectly used by physicians and surgeons in designating acute or subacute lesions occurring in certain organs within the peritoneal cavity. Approximately 30 per cent of patients admitted to hospitals with a diagnosis of acute appendicitis have an associated peritonitis, but the word perforation seldom appears on their notes of admission. The term "perforated duodenal ulcer" is frequently used and it is generally accepted that *acute* perforation is indicated, but a definite percentage of perforations of the duodenum are subacute. Subacute perforations of the gallbladder and diverticula of the colon occur less frequently than subacute perforation in the appendix and duodenum, but when they do occur the preoperative diagnosis is invariably cholecystitis or diverticulitis.

Frank perforation of the appendix with an associated spreading peritonitis or appendiceal abscess is usually diagnosed by the attending physician, but he invariably fails to recognize the subacute perforation which precedes the formation of the abscess. Of the 3352 clinical records of patients admitted to the 181 general hospitals of Pennsylvania in 1937, only 1048 or 31.93 per cent had frank acute perforations when admitted; the remaining 68.07 per cent had subacute perforations—1154 a localizing process, 1080 an abscess (Table I).

TABLE I

PERFORATED APPENDICITIS

Number of cases with acute appendicitis		19,398
Number of cases with perforation		3,352
Percentage of cases with perforation		17.28
Acute Perforations	*No. of Cases*	*Per Cent of Cases*
Spreading peritonitis	1048	31.93
Subacute Perforations		
Localizing process	1154	68.07
Appendiceal abscess	1080	

In justice to the physicians who attended these patients before hospitalization, it must be stated that frequently *surgeons* not only fail to diagnose the subacutely perforated appendix before operation but preoperative diagnosis of subacute perforation of the duodenum and gallbladder before abscess formation is the exception and not the rule. The principal cause for this failure to recognize these lesions is the subtlety with which they develop. This subtlety occurs because:

1. The devitalization of tissues in the wall of a normal organ, which results in perforation, usually occurs gradually.
2. Preperforative pathology in an organ or in tissues contiguous to it prevents frank leakage and spreading peritonitis.
3. The perforated organ is usually so located that gross peritoneal contamination seldom occurs.

1. *The Devitalization of Tissues in the Wall of a Normal Organ, Which Results in Perforation, Usually Occurs Gradually.*—Acute perforation in the normal tissues of an abdominal viscus is relatively rare. Corrosive acids and alkalies, when swallowed, more frequently produce subacute perforation and stenosis of the esophagus than acute perforation and mediastinitis, and when such fluids reach the stomach in sufficient amount and concentration to produce necrosis, perforation may be delayed many hours. Trauma in the form of bullet wounds is the most frequent cause of acute perforation of the stomach per se. Patients seldom die of spreading peritonitis the result of acute perforation of a loop of gangrenous intestine—they die of a toxemia before perforation has had time to occur.

The majority of subacute perforations occur in appendices that have not been previously inflamed. The low virulence of the micro-organisms produces a mild inflammatory reaction which delays perforation of the serous coat until general

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Dr. Bower is chairman of the Commission on Acute Appendicitis Mortality of The Medical Society of the State of Pennsylvania.

defensive measures controlled by the abdominal ganglia can become effective. One of the earliest evidences of this defense is the appearance of serous fluid in the peritoneal cavity. The time of appearance and character of this exudate depend upon whether the tissues of the organ involved have been previously infected, the virulence of the micro-organism, and the tissue response. Usually, within a few hours after the onset of severe infection, fluid appears in the peritoneal cavity. In addition to the power of this exudate to neutralize toxins, it also has a physical function—that of helping the omentum migrate to the inflammatory site. Plastic exudate is concentrated serous exudate. It is most frequently found on the serous coat of the appendix where it acts as a vulcanizing patch over a devitalized area, delaying perforation; it also diminishes peristalsis by gluing loops of ileum and omentum, or appendix and omentum together.

2. *Preperforative Pathology in an Organ or in Tissues Contiguous to It Prevents Frank Leakage and Spreading Peritonitis.*—The exception to this is the perforation of the anterior wall of the second portion of the duodenum, the majority occurring in the center of old ulcers. The most frequent perforations of the stomach, however, are subacute in character and occur in chronic ulcers on the posterior wall; inflammation with resultant attachment and thickening of pancreatic tissue contiguous to the ulcer prevents the development of acute spreading infectious processes within the lesser peritoneal cavity. Thickening of the appendiceal wall and contiguous tissues caused by previous inflammatory attacks favors the development of subacute perforations. The early immunologic response because of tissue sensitization developed in the initial attack may explain the lessened severity of symptoms and signs accompanying a subsequent subacute perforation.

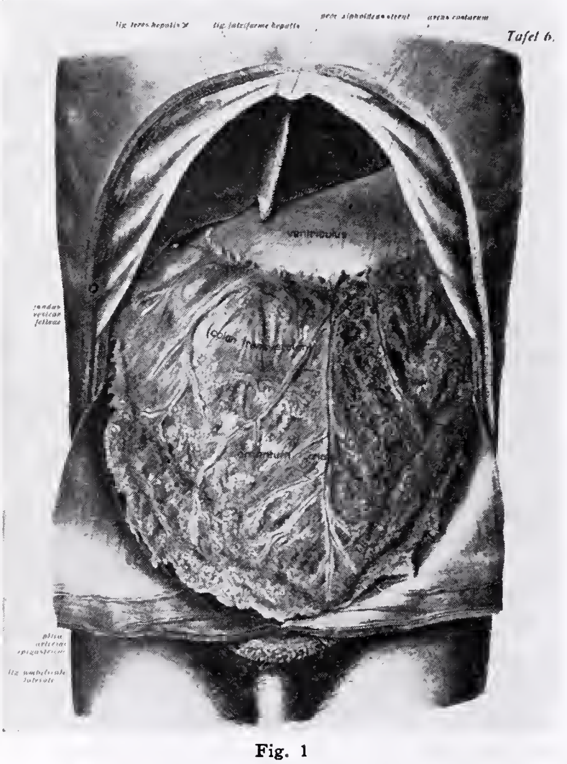


Fig. 1

3. *The Perforated Organ Is Usually So Located That Gross Peritoneal Contamination Seldom Occurs.*—With the exception of a part of the anterior wall of the stomach, the greater peritoneal cavity is protected from gross visceral leakage following perforations by contiguous organs or tissues. Even in the area of the exposed stomach, acute, subacute, or chronic perforations seldom occur (Fig. 1).

In the right upper quadrant of the abdomen where perforations of the duodenum or gallbladder occur, the undersurface of the right and left lobes of the liver, the falciform ligament, the hepatic flexure of the colon and its mesentery, the mesentery of the duodenum, and the omentum all tend to prevent leakage into the peritoneal cavity (Fig. 2).

The relation of the appendix to the cecum in the right lower quadrant of the abdomen is responsible for the great frequency with which subacute perforations are not recognized early; a large percentage subsequently develop into an appendiceal abscess. Approximately 45 per cent of appendices are postcecal and 29 per cent are located in the pelvis. Adjacent tissues and organs prevent frank leakage into the peritoneal cavity (Fig. 3).

In the left lower abdomen, rupture of a diverticulum of the sigmoid is the most frequent cause of peritonitis. The lateral abdominal wall, the omentum, and ileum usually prevent the development of a frank spreading peritonitis (Fig. 4).

The Diagnosis of the Subacute Perforation

The Duodenum.—Subacute perforation occurs more frequently than is suspected, the small opening in the center of a calloused ulcer on the anterior wall of the first portion of the duodenum being frequently plugged by plastic exudate. The omentum, the undersurface of the right lobe of the liver, the falciform ligament, or the gallbladder help to quarantine the process. Agonizing pain, characteristic of acute duodenal perforation, is absent; rarely is it severe enough

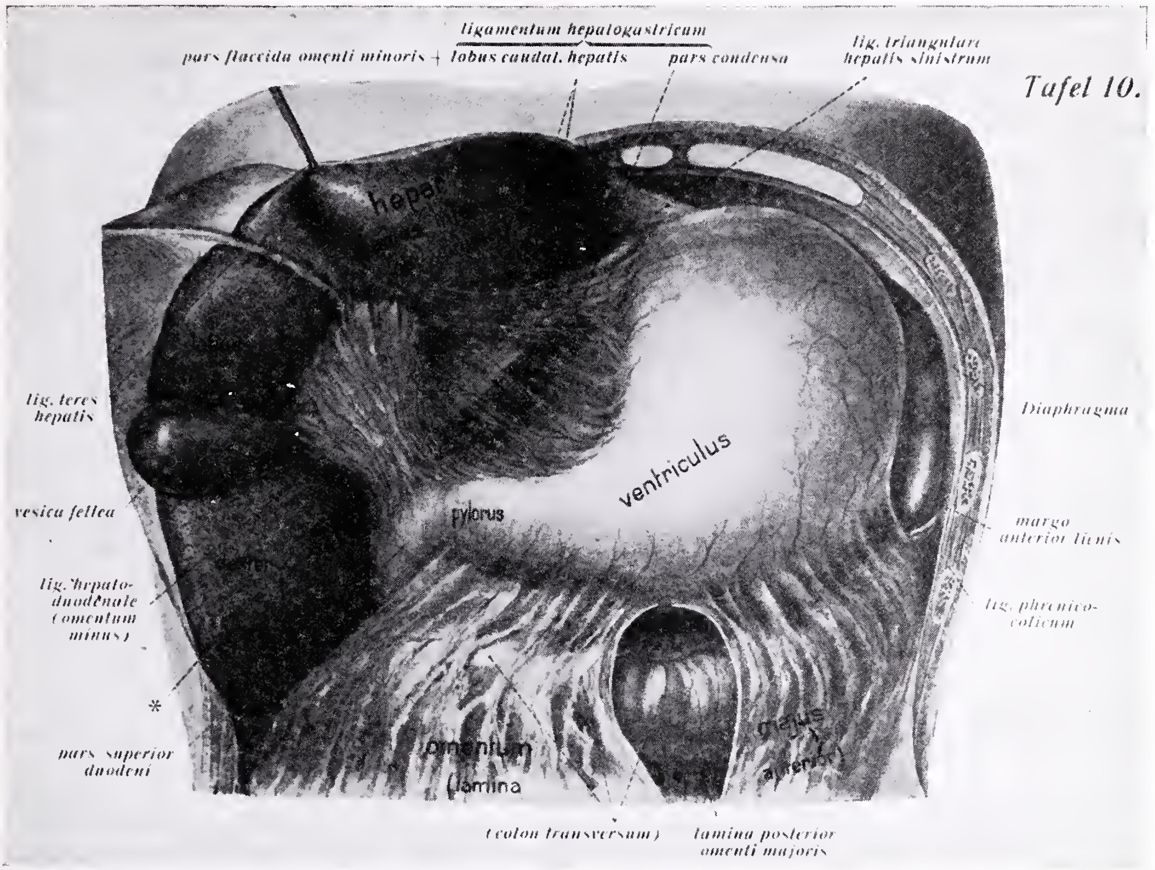


Fig. 2

to make the patient double up or require a hypodermic or morphine. The usual history is that the patient does not vomit unless something is taken by mouth. Examination reveals right upper abdominal tenderness and muscle spasm, but no rigidity. There is a slight rise in temperature and pulse and an increase in the number of leukocytes. There is no change in liver dullness, no free fluid in the abdomen, and invariably roentgen ray will not reveal gas beneath the diaphragm.

The Gallbladder.—The devitalized gallbladder will become attached to the wall of the stomach, duodenum, or colon and empty its contents into these organs more frequently than it will perforate and empty its contents into the greater peritoneal cavity, producing a spreading peritonitis. Considering that the gallbladder moves with respirations and that its bulbous end frequently extends beyond the liver, this statement is rather surprising. Subacute perforations are invariably diagnosed "gallstone colic." The symptoms of perforation at times vary only slightly from typical stone colic and are usually diagnosed and managed as such. The following illustrates:

A male patient who knew that his gallbladder contained calculi developed an attack while vacationing in the South. He called in a physician who gave him a dose of morphine. He was in bed less than 24 hours. Several days later he recovered a faceted gallstone 1½ cm. in diameter from his fecal dejection. Two months later at operation we found that the stone had passed through an anastomotic opening in the hepatic flexure of the colon; a few small calculi were embedded in the serous coat of the colon near the perforation, evidence of a subacute perforation with associated local peritonitis.

Table II

Gallbladder Disease—657 Patients

		Per Cent
86	Acute cholecystitis	18.1
9	Perforations	10.46% of acute cases
2	General peritonitis—mortality	50
7	Local peritonitis—mortality	14

The Appendix.—The diagnosis is difficult. It is made most frequently—not *before* hospital admission—not in the hospital *before* operation—but in the operating room *after* the incision has been made.

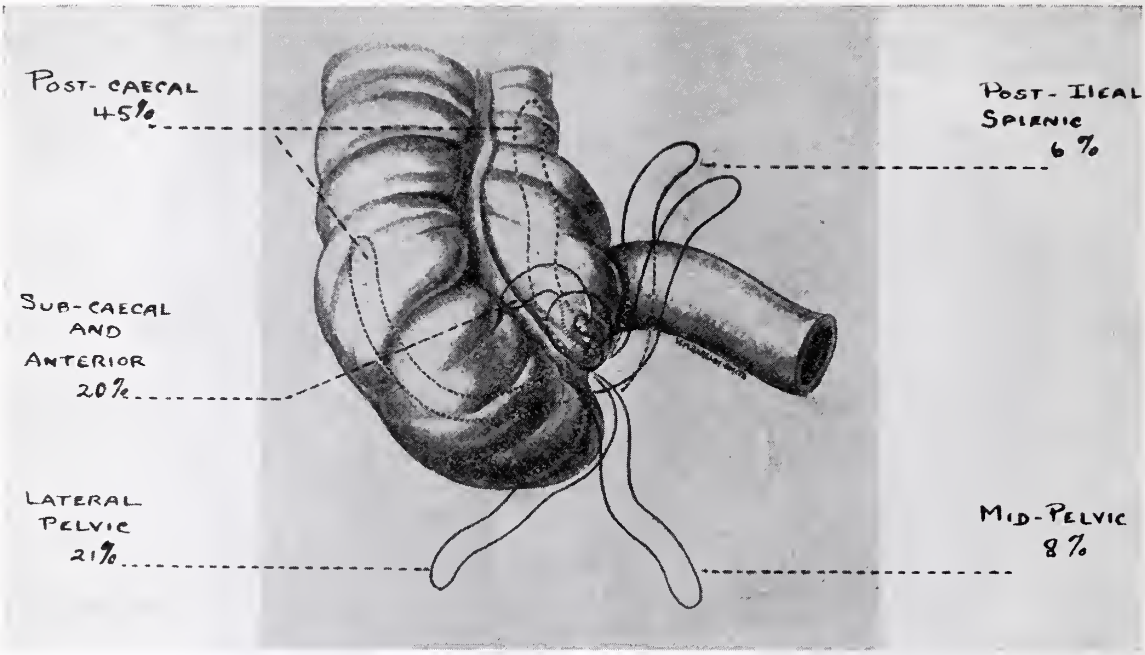


Fig. 3

The factors responsible for the failure to diagnose this lesion are not constant. Those confronting the attending physician and surgeon are briefly mentioned.

Factors Confronting the Physician. — The only sure way to prevent an appendiceal perforation is to remove the acutely inflamed appendix at the onset of symptoms; perforation may occur as early as 4 hours after the initial pain. Obviously, there are many obstacles which interfere with immediate hospitalization and operation. When they are insurmountable, the attending physician can make an early diagnosis of subacute perforation by careful management. This means physical examinations every 4 hours, nothing by mouth, the withholding of morphine or other anodynes or hypnotics, the Fowler position, and repeated leukocyte counts (observing the relation between the mature and immature forms), comparing these with temperature, pulse, and changes in physical signs —all of which should be carefully written on the patient's chart. If the physician will persist in this routine, he will not only be able to differentiate resolution from early gangrene with perforation but the information obtained will be invaluable to the surgeon. The importance of the history in the later management of the patient is shown under the following subheading:

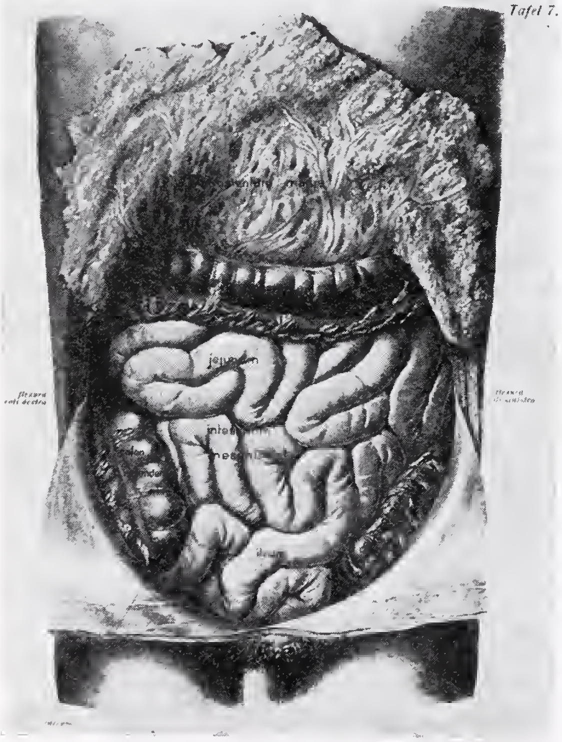


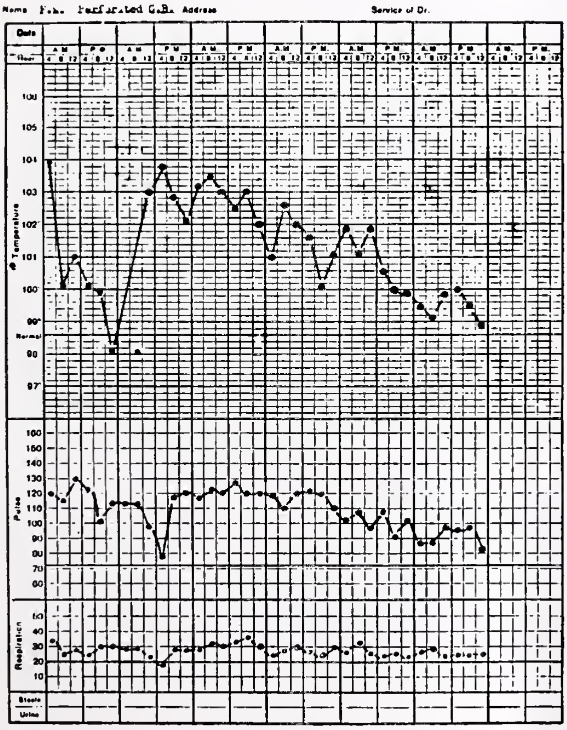
Fig. 4

Factors Confronting the Surgeon.—The tendency of surgeons is to base their management of patients suffering with an acute abdominal condition on the results of their initial physical examination, which in the case of a localizing process is always important, but vastly more important when considered in relation to the physical findings preceding admission to the hospital. The average time that elapsed between onset of symptoms and operation in the 1154 patients was 98 hours, so the surgeon's examination took place at a time when physical findings were minimal. He examined the patient in only one phase of the infectious process—the subsiding phase. This accounts for the usual error—the preoperative diagnosis of subsiding appendicitis.

One physical examination by a surgeon, therefore, is relatively not as important from the standpoint of diagnosis as a full report of the repeated examinations of the patient by the attending physician. This contention is supported by the following: The localizing process may be masked by a distended cecum in 45 per cent of instances; tenderness (typical of an acutely inflamed appendix) may be present, and other physical findings may be absent; 29 per cent of localizing processes are in the pelvis; rectal examination may reveal only a tender mass. The signs of a frank perforation are absent; there is no marked rigidity, peristaltic sounds may be diminished but not absent, and usually there is little or no distention of the intestines. If the attending physician does not follow his patient to the operating room or cannot be contacted, a complete history will aid materially.

Eleven hundred and fifty-four patients admitted to the 181 hospitals in Pennsylvania in 1937 with a diagnosis of acute appendicitis had perforations completely sealed with plastic lymph or the process was quarantined by loops of ileum and omentum or intestine, or by overlying cecum or the lateral abdominal wall. These 1154 patients were admitted with an average temperature of 99.7 F. and a pulse of 100. They were operated upon on an average of 98 hours after the onset of symptoms, and 24.35 per cent died. I believe you will agree with me that if the Commission on Acute Appendicitis Mortality, appointed by the Board of Trustees of this society, has done nothing more than call attention to this group of cases, its existence is justified.

Chart 1



During the next 5 years the main effort of the commission will be to wipe out the mortality of this spreading group, more than one-half of which are induced from the localizing process. We will ask every surgeon in these 181 hospitals to co-operate. Patients admitted with an average temperature of 99.7 and a pulse of 100 *should not die,* especially since they are the best surgical risks that come to our operating rooms —average age 30. These patients are not so much in need of an operation as they are in need of proper management. In most instances the 281 died because of *too much* surgery. In an endeavor to answer the questions which must arise in your minds following such a statement, let us attempt to visualize what might have happened to these patients if they had been operated upon later. We have just such a control group in the appendiceal abscesses (Table III).

Table III

No. of Patients	*No. of Deaths*	*Mortality Per Cent*	*Age*
1154	281	24.35	30

Average			
On Admission			
Temperature	*Pulse*	*Onset of Symptoms to Operation (Hours)*	*Operation to Death (Hours)*
99.7	100	98	216

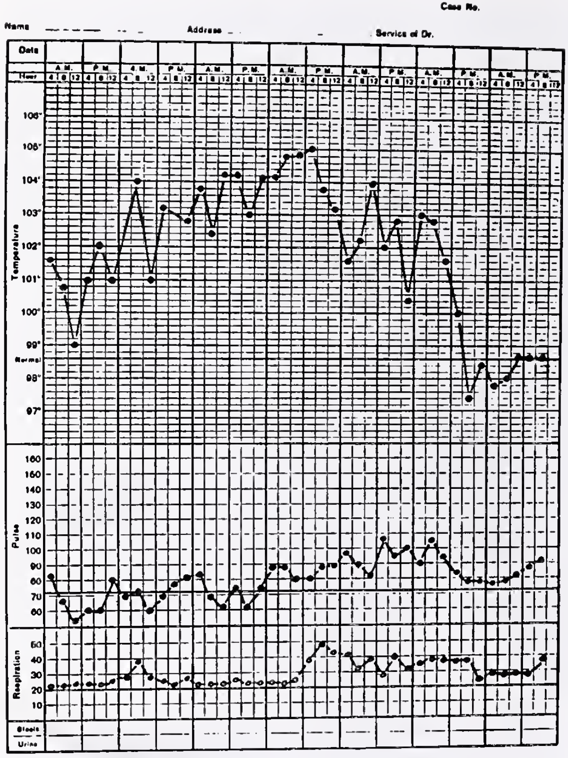
The Appendiceal Abscess.—Ten hundred and eighty patients, average age 30, were admitted to hospitals with an average temperature of 100 and a pulse of 99. The only difference between these patients and those in the localizing group is that these were operated upon when a definite abscess had formed, when a mass could be felt

Table IV

No. of Patients	*No. of Deaths*	*Mortality Per Cent*	*Age*
1080	13	1.20	30

Average			
On Admission			
Temperature	*Pulse*	*Onset of Symptoms to Operation (Hours)*	*Operation to Death (Hours)*
100.0	99	123	235

Chart 2



(an average of 25 hours later than the localizing group), and when active infection had subsided. The mortality in this group is 1900 per cent less than in the localizing group (Table IV).

To be convinced of the statement that too much surgery was responsible for the higher mortality in the localizing group, one need only review the postoperative reaction of these patients. Immediately after operation their temperature and pulse rose, the seriousness of their condition being directly proportionate to the degree of peritoneal trauma—the amount of manipulation necessary to remove a badly situated or devitalized appendix. These localizing processes were converted into spreading processes at operation and the mortality was that of spreading peritonitis—1 in every 4.

That a dose of antigen withheld or administered by surgeons determines recovery or death of patients with perforations is shown by what happened to 3 patients with subacute perforation of the gallbladder. The first patient recovered. A minimal dose of antigen was given and Ochsnerization instituted (see Chart 1). The second patient also recovered. A moderate dose of antigen was given. The operation was a cholecystostomy with drainage (see Chart 2). The third patient died. A maximal dose of antigen was given. The operation was a cholecystectomy (see Chart 3).

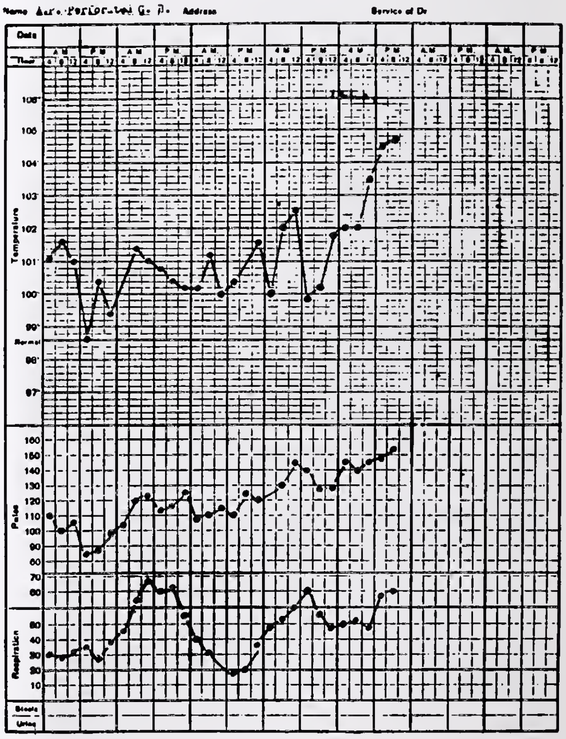
Competent Management of Subacute Perforations

Competent management of subacute perforations, regardless of the organ involved, necessitates (1) immediate hospitalization, and (2) deliberation before operation.

Immediate Hospitalization. — Subacute perforation of any abdominal viscus is more likely to be correctly diagnosed in an approved general hospital than at home. A physician who has managed or assisted in the management of this type of case can obtain for his patient at home a type of service which will approximate that in an approved hospital, but it cannot be obtained as easily, carried out as expeditiously, performed as economically, or followed through as efficiently as in the hospital. In the modern hospital the patient admitted as an emergency can obtain within an hour a Schilling index, sedimentation rate, a urinalysis, and a flat plate of the abdomen. Morphine, the masker of symptoms and signs, can better be withheld, or given earlier if indicated. Sympathetic members of the family can interfere less with the best interest of the patient in the hospital. In addition, the family physician invariably experiences a great sense of relief, knowing that he has done the best thing for his patient.

Deliberation Before Operation.—The average time that elapsed between onset of symptoms

Chart 3



and operation in the 3352 perforated cases admitted to the 181 hospitals in Pennsylvania in 1937 was 85 hours. Ninety-five per cent of these patients were operated upon within 6 hours after admission to the hospital. *Before hospital admission,* the patient, relatives, and family physician "deliberated" 79 hours. Did the routine "immediate operation regardless of pathology" adopted by surgeons help these patients? Here is the factual evidence from their records:

> 1080 were operated upon 123 hours after onset of symptoms—1.2 per cent died.
>
> 2272 were operated upon 84 hours after onset of symptoms—24.65 per cent died.

Why this difference in mortality? It could not have been age. In the first group the average was 30; in the latter, 26. It could not have been the individual surgeon—383 operated in the first group, and 632 in the second group. It could not have been the technic—appendectomies were done in over 90 per cent of cases in both groups. Ether, nitrous oxide and ether, and spinal were the anesthesias employed in approximately the same number of instances in both groups. It must have been *time.* Just as delay before hospitalization is largely responsible for the increase in perforations and mortality, so delay after hospitalization—time deliberately used to review what has happened to these patients, correlating this with physical and laboratory findings in evaluating the character of their immunologic response—will reduce mortality.

ABSTRACT OF DISCUSSION

HARVEY F. SMITH (Harrisburg): Clinical recognition of the kind of perforation described by Dr. Bower frequently presents real diagnostic problems. The symptomatology may be so mild in some cases that perforation is not suspected or is uncertain even to one quite familiar with the usual clinical picture. In these mild cases persistent local tenderness may be the one symptom that sends the patient to his physician, and it may be the first diagnostic signpost. In this group the clinical course is always in the direction of recovery, and the surgeon has ample time to consider whether or not an operation is necessary or advisable.

We all know that the diagnosis of an acute perforation is based upon the symptoms of acute peritonitis. The diagnosis of a subacute perforation is usually based upon the clinical course of these symptoms. Our conception of this clinical course proceeds somewhat as follows: The perforation occurs, limiting adhesions form or were present prior to the perforation, the opening is quickly closed by plastic lymph, the peritonitis remains quite local, and the subacute stage is reached. This clinical course will vary with the abdominal organ involved, the amount of leakage, the time required for the spontaneous plugging of the small opening, and the presence or absence of pre-perforative adhesions. The onset may be abrupt, quite like a free perforation, except in the degree of clinical severity and the rapidity with which the acute symptoms subside.

When a patient is seen in the early hours of this type of attack, I do not believe it is possible to predict the trend of the abdominal pathology. Therefore, prompt surgery is the treatment of choice. Obviously, it is of prime importance to suspect or actually recognize that a perforation has occurred. When the diagnosis is not made until the third or fourth day, the management should be governed by the location of the pathology and the existing clinical manifestations. If the lesion is really subacute, the symptoms of peritonitis are mild and subsiding, and operative delay will work well. Under these conditions it is good surgical judgment to trust, for several more days, to physiologic rest and to nature's defensive mechanism.

Dr. Bower has rightly emphasized the importance of a correct preoperative diagnosis. The fourth or fifth day symptomatology may be vague and indefinite so that the significance and gravity of the abdominal lesion can easily be missed. It is worth while to re-emphasize that the management of patients in this group should be directed by the experienced heads of the hospital's surgical service. As a rule, some form of chronic pathology precedes perforation occurring in the 4 common locations listed. This pathology produces certain symptoms, sometimes over a period of years. Valuable diagnostic clues are available if these facts are properly recorded and intelligently interpreted.

An adequate gastro-intestinal history is not one of the accomplishments of the average hospital intern upon whom the chief usually depends for this essential information. A poor history is usually a corrollary to a missed diagnosis. If a larger percentage of correct diagnoses is our desire, there must be a return to the old basic fundamental principles of information gathered from the physical examination combined with an adequate previous history and a step-by-step story of events occurring during the present attack. Of course, roentgen-ray and laboratory procedures should not be discarded, but their real diagnostic value is variable.

The moral of all this is quite obvious; surgeons and internists must continue to be students of gastro-intestinal lesions and their surgical management.

Do you carry an emergency fracture kit in your motor car? See page 1189.

Secondary Exophthalmic Goiter

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TO BOTH the physician and the layman the most important disease of the thyroid gland is known as goiter. The term goiter actually means only an enlargement of the thyroid gland. Of thyroid enlargements, there are essentially 3 important kinds; first, simple colloid or colloid and nodular goiter, which is not associated with toxic symptoms. The enlargement of the thyroid in this type of goiter is the result of a response to a demand for an increased function of the gland. The glandular reaction is an exaggeration of the normal cycle or pattern of hypertrophy and hyperplasia of the cells lining the acini, followed by involution back to a colloid resting stage. At first, the colloid state is diffuse, but with repeated cycles it soon becomes nodular. It is essentially the result of a response to an abnormal iodine deficiency. Second, exophthalmic goiter, associated with definite signs of toxicity, which depends for its origin on what is known as a "Graves' constitution," brought to light by an activating stimulus. These are well-accepted facts and apparently so well understood by all, both clinically and pathologically, that they cause little confusion in dealing with patients who have thyroid disease of these types. Third, carcinoma of the thyroid, which we do not generally speak of as a goiter and which has no bearing in the present problem and will not be discussed.

That phase of thyroid disease which seems to us to be the greatest cause of confusion lies in the relationship of exophthalmic goiter to those cases of goiter of the colloid nodular type which secondarily develop signs of toxicity. It is in this latter type of case that we find the greatest amount of difficulty in understanding the correlation of the pathologic findings with the clinical picture. It is the purpose of this discussion to attempt to clarify this picture.

In any consideration of these 2 types of thyroid enlargement (colloid nodular and exophthalmic), we find it frequently not appreciated that the colloid nodular type may develop in an individual with an underlying "Graves' constitution." Through some activating stimulus, such an individual may develop a thyrotoxicosis of the Graves' type, superimposed upon the already existing colloid nodular goiter. This is the pathologic state of the thyroid which is sometimes called, more frequently in European countries, "secondary exophthalmic goiter" and in this country, "toxic nodular goiter," either of which, in our opinion, is a correct term.

Unfortunately, this state of thyrotoxicosis in the presence of a nodular goiter is often classified as a "toxic adenoma." We have had this fact vividly impressed on us in talking with students, who, in spite of teaching to the contrary, when asked to classify goiters, will in a great many instances use the term "toxic adenoma" as one of their classifications. In reviewing the hospital histories of thyroid cases over a 10-year period, written by interns from all over the country, a fairly high percentage use the term "toxic adenoma" in giving their diagnosis of a case. A large number of physicians will send their patients to the surgeon with a similar diagnosis. In view of these facts, we believe a re-

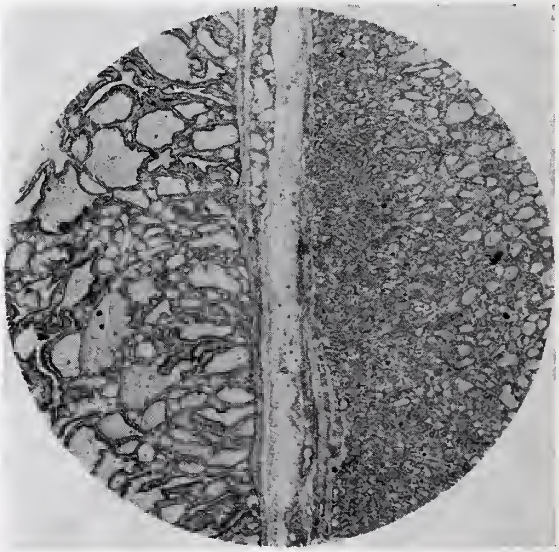

Fig. 1. Low power field showing hyperplastic thyroid gland tissue (to left), and the margin of an inert and degenerating nodule (to right).

Read before the Section on Surgery of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 3, 1940.

From the Surgical Service, Mercy Hospital, Pittsburgh, and the Department of Surgery, School of Medicine, University of Pittsburgh.

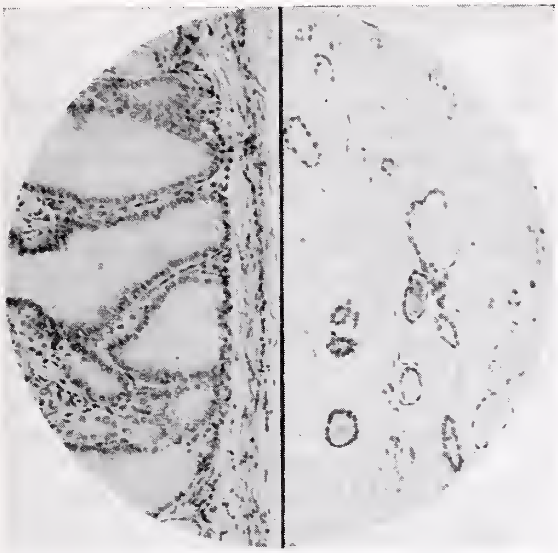

Fig. 2. High power fields from Fig. 1 showing acini containing some colloid, but lined by hypertrophied and hyperplastic epithelium.

view of the process by which nodules are formed in the thyroid is justified. In so doing, it is important to distinguish between nodules in the thyroid gland and the rare true adenomas or benign new growths of the gland.

One must agree that the formation of any goiter is primarily the result of hypertrophy and hyperplasia within the gland proper, regardless of the stimulating factors. In the case of certain individuals this cause is often to be found in a lack of the proper raw material or proper assimilation of this material, i. e., iodine, or in a temporary increase in the demand of the body for the product of the thyroid gland, thyroxin. This results in a hypertrophy and hyperplasia of the cells lining the acini, together with an increase in the vascularity and lymphocytic infiltration of the gland and in a decrease in the stainable colloid. It is essentially a compensatory mechanism.

After the thyroid, by increased activity, meets the demands of such a physiologic state, regardless of cause, an involution takes place in the gland. Briefly, this involution consists of the gland reapproaching its colloid resting stage, with a change in the columnar type of cell back to the normal cuboidal, an increase in the stainable colloid, and a decrease in the vascularity and lymphocytic infiltration. In addition, there is a definite increase in the amount of fibrous tissue in the interacinar stroma.

That all degrees of hypertrophy and hyperplasia, from mild to severe, may take place in thyroid glands is an established and accepted fact; but that all degrees of the involutionary process, from hypoinvolution to hyperinvolution, may take place in these glands, while accepted as a fact, is often not fully appreciated. In some sections of a colloid goiter, or one that is in a resting state following hypertrophy or hyperplasia, one may see localized areas of hypoinvolution in which the acini are still lined with a columnar type of cells with a small lumen and little colloid, while in other sections, very often in the same gland, one may see areas of hyperinvolution. These areas of hyperinvolution, so accurately described by Reinhoff and Lewis, Marine, and others, are usually limited to one area or lobule of the gland.

The process of hyperinvolution is characterized by any one or all of 3 types of pathologic pictures. In one the process is limited to a single acinus; in another it is limited to localized groups of acini in a lobule; and in still another it is characterized by marked degeneration of the localized groups of acini. In the first type there is an unusually large deposit of colloid within a single acinus, lined by flattened epithelium, and forming a cyst-like structure. In the second, there is a localized group of acini, each with the type of histologic picture seen in the first, accompanied by an increase in the fibrous tissue stroma and by compression of the surrounding normally involuted thyroid. In the third, there is an even greater degree of hyperinvolution, in which the acini in the localized areas become so distended with colloid that they often undergo disintegration, with some of the acini appearing to have ruptured, scattering their colloid into the greatly increased amount of interacinar stroma. This necessarily decreases

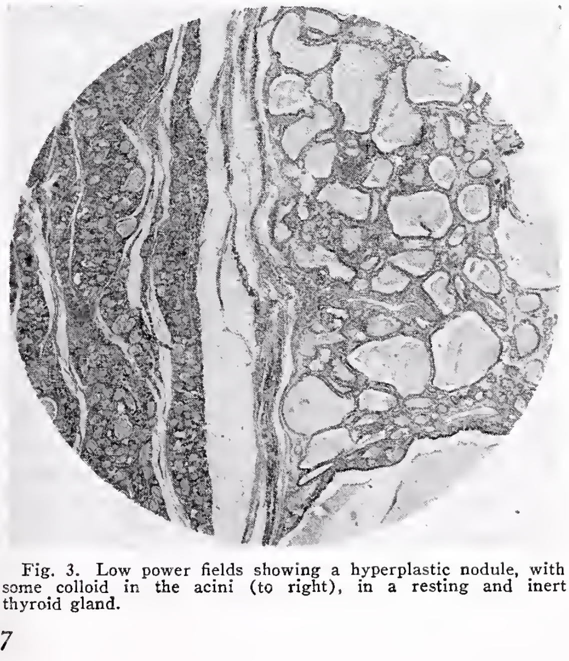

Fig. 3. Low power fields showing a hyperplastic nodule, with some colloid in the acini (to right), in a resting and inert thyroid gland.

the number of functioning acini within the lobule itself.

It is well known that in this type of thyroid (the colloid-nodular goiter) the cycle of hypertrophy and hyperplasia, followed by a remission, may repeat itself many times in the life of any one individual. With each cycle this localized hyperinvolutionary process progresses to a greater degree until we find that the area involved has become encapsulated (as a result of compression of the surrounding thyroid) by what simulates a true fibrous capsule. Within the enlarging encapsulated area, there eventually develops a process of disintegration, usually starting in its center, where we find cystic degeneration. This is often followed by hemorrhage, then organization, which gives rise to a grayish hyaline and edematous connective tissue. Finally, we find this area to be the seat of calcium deposits.

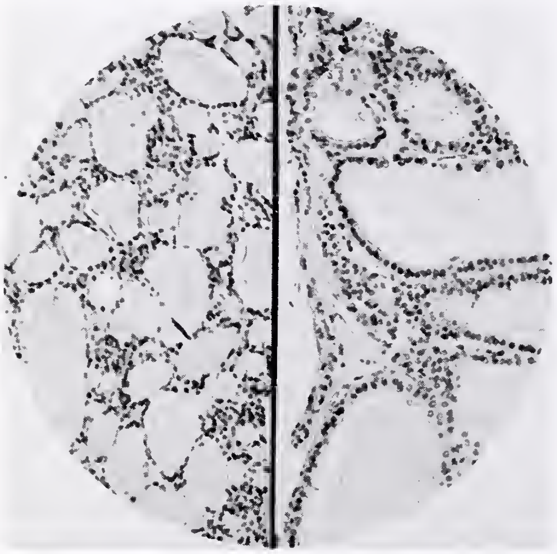

Fig. 4. High power fields from Fig. 3 showing well-marked hypertrophy and hyperplasia of the epithelium of the nodule with thin and vacuolated colloid in the acinar lumina (to right). The resting thyroid gland, with cuboidal to flattened epithelium and dense colloid, is shown at the left.

This process may, and in fact often does, proceed until there is left within the localized hyperinvoluted area very little if any functioning tissue. Briefly then, the areas which we palpate clinically and call nodules or adenomas, which grossly appear nodular and very often show on section the various stages of degeneration, are nothing more or less than areas of hyperinvolution. They arise as a result of the well-known process of hypertrophy and hyperplasia followed by involution and are in no sense of the word true adenomas.

Although no one questions an entirely different etiology of the simple nontoxic colloid or colloid-nodular goiter from that of the true exophthalmic goiter, the cellular response to stimuli in the two types of goiter is similar. The involutionary process just described has been shown by Reinhoff to take place also in the true exophthalmic gland, resulting generally in small nodular areas which he has termed "involutionary bodies." There may be some slight difference in the pathologic picture. This is chiefly due to the type of gland with which one is dealing and to the fact that the process in exophthalmic goiter is a much more acute one with a rapid involution (usually the result of iodine administration) resulting in a large number of widely scattered miliary type of nodules. In contrast, in the colloid-nodular type, the process is one drawn out over a period of years, producing large and small nodules irregularly located in the gland. The difference is, as Boyd states, quantitative rather than qualitative.

Where the term "adenoma" as applied to these nodules had its origin is not within our knowledge. They may, descriptively, be called pseudoadenomas. To be sure, there are true benign tumors called adenomas of the thyroid gland. These occur in approximately 8 per cent to 10 per cent of cases of nodular goiter. However, these true adenomas take no part in the hyperplasia and involutionary processes of the rest of the gland and, like malignancies, may be disregarded in this discussion. The nodules found in secondary Graves' disease are not benign tumors, and I mention the term "adenoma" as applied to the nodules under discussion only to condemn its use.

We have the fact firmly implanted in our minds that exophthalmic goiter develops in an individual with the so-called "Graves' constitution." This is, in brief, an inherited or possibly acquired neuro-constitutional instability which Warthin has so accurately described. *The toxic symptoms in this condition very often are initiated by an activating stimulus such as a severe emotional upset.* Younger individuals are more subject to this condition, and the disease itself is likely to be reasonably acute. An advanced degree of nodularity is seldom seen, probably because there has not been sufficient time for nodulation to develop. The colloid goiter also develops as a rule early in adolescent life as a result of iodine deficiency; and as the cycle of hypertrophy and hyperplasia and involution proceeds, nodularity frequently appears, more commonly after age 30. As has been pointed out previously, very little has been said in the literature to indicate that a simple colloid-nodular goiter, resulting from iodine deficiency, may develop in an individual with a "Graves' constitution," or that a patient with a colloid-nodular goiter may, through the years, as a result of the stress and strain of life, acquire such a constitutional make-up. If either of these is true, and certainly no one can deny this possibility, then it becomes more readily understood how and why toxic symptoms develop on top of a nodular goiter, resulting in the toxic nodular goiter or secondary exophthalmic goiter.

The essential pathologic picture of a toxic nodular goiter is that of the previously described hyperinvoluted colloid nodular gland plus microscopic evidence of present or past glandular activity. If hyperplasia is found, it is either located in the gland proper or in the localized nodule or both; much more commonly, however, in the gland proper. The reason for this is that the majority of the nodules are largely degenerated and have practically no functioning tissue. If hyperplasia is found in the nodule, it is in some of the remaining functioning acini in that nodule. Therefore, it is more commonly found in those cases of nodular goiter that have not undergone the most advanced stages of hyperinvolution. If actual hyperplasia is lacking in both nodule and surrounding gland proper, we will still find evidence of previous hyperplasia in the presence of increased amounts of fibrous tissue and in collections of lymphoid cells in the stroma. The latter are most characteristic when they appear as lymphoid follicles.

It is true that we do find evidence of hyperplasia and hypertrophy in the nodular areas seemingly without evidence of recent activity of the surrounding glandular tissue of the thyroid. It is also true that cases have been reported by Lahey, Crile, Cattell, and others of toxic nodular goiters apparently cured of their toxic symptoms by merely excising a nodule. These must of necessity be that type of toxic nodular goiter in which hyperinvolution of sufficient degree has taken place to create the presence of a nodule but not of sufficient degree, up to the time of operation, to produce the more commonly seen picture of advanced stages of degeneration of the nodule. The removal of the nodule thus chanced to remove enough active thyroid tissue to affect the symptoms. Certainly, in our opinion, this type of case would be well in the minority and would not warrant separately classifying these cases as instances of toxic adenoma, inasmuch as there is good evidence that the cause of the toxic symptoms is more commonly found in the surrounding gland, not to mention the fact that the nodules are not adenomas. Regardless of the location of the hyperplasia, whether located in the remaining acini of a nodule or in the gland proper, the cellular response to stimulus follows a constant pattern. This pattern differs not at all from that seen in true Graves' disease.

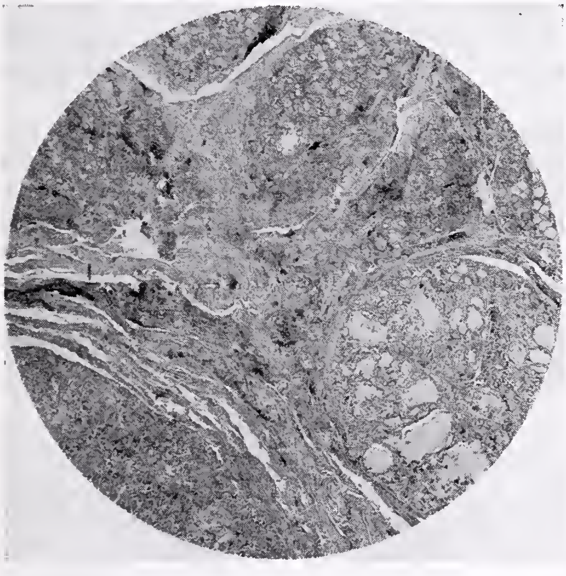

Fig. 5. Low power field showing an inert gland in which fibrosis of the stroma and lymphoid cell infiltration are outstanding. The latter takes the form of lymphoid follicles in the stroma. These changes indicate previous glandular activity. At the lower left is seen a part of an inert nodule.

We have recently reviewed a series of 608 successive thyroid cases on which partial or subtotal thyroidectomies were performed by one of us (J. P. G.). In this series we found a total of 350 of the nodular type of goiters, or 57.7 per cent of the total. Of the 350 nodular type of goiters, 200 or 32.8 per cent of the total were definitely toxic.

Our interest was centered on these 200 cases of toxic nodular goiters and this paper is presented as a preliminary report of this series. Of the 200 toxic nodular goiters, 186 were in women and 14 in men. The average age was 40½ years. The average basal metabolism rate in 176 cases was 36 per cent. It was not recorded in the others. In 136 of the cases, the average known duration of the goiter was 9 years. The average duration of definite symptoms in 176 cases was 1½ years. In 75 of these cases the duration of definite symptoms was less than 10 months. However, it should be noted that the great majority of these patients described themselves as having always been of a nervous disposition or as having had nervous upsets over a period of many years. From a review of the histories of this series of cases, one gathers the impression that as a group these patients were created with unstable nervous systems. Their resemblance as a whole to the "Graves' constitution" type is quite striking. The onset of definite symptoms (meaning that the patient noticed a sudden change or increase of symptoms) was in a very high percentage of cases accompanied by some unusual stress or strain or by an emotional upset. The initiation, in this group of patients, of toxic signs and symptoms, as a result of some activating stimulus, is almost a textbook parallel with the initiation of toxic signs and symptoms as seen in Graves' disease. The entire 200 patients complained of signs and symptoms that would lead one almost immediately to a diagnosis of hyperthyroidism. These were the typical signs as seen in Graves' disease, i. e., palpitation, tachycardia, nervousness, etc. Exophthalmos was the only notable feature lacking. However, a great number did have a typical penetrating stare.

Of the 200 cases, 94 showed microscopic evidence of hyperplasia only in the gland proper. The average basal metabolism rate for this group was 39.4 per cent. Twenty-three showed evidence of hyperplasia only in the nodules. This group had an average basal metabolism rate of 30 per cent. Twenty-seven cases showed hyperplasia in both the gland proper and nodules. The average basal metabolism rate for this group was 35.3 per cent. Fifty-six cases showed no evidence of hyperplasia in either the gland proper or nodules, but did show evidence of recent gland activity as shown by deposits of lymphoid cells and an increase in the fibrous stroma. The average basal metabolism rate for this group was 31.6 per cent. It must be added that clinically this group also was definitely toxic.

Comment

Our contacts with medical students and physicians impresses upon us that there is a considerable degree of confusion in the relationship between true Graves' disease and toxic nodular goiter or secondary Graves' disease. The use of the term "toxic adenoma" is, at least in part, the cause of this state of confusion. A review of the pathologic histology of the nodules in toxic nodular goiters proves them not to be true adenomas or benign tumors. It also reveals that in a large number of cases the majority of the nodules have undergone such an advanced stage of degeneration that they have little if any functioning tissue left; and that when hyperplasia is found in a nodule it differs in no respect from that seen in the gland proper. In other words, it is clear that the nodules are a part of the gland and that, unless degenerated, they react like the rest of the gland.

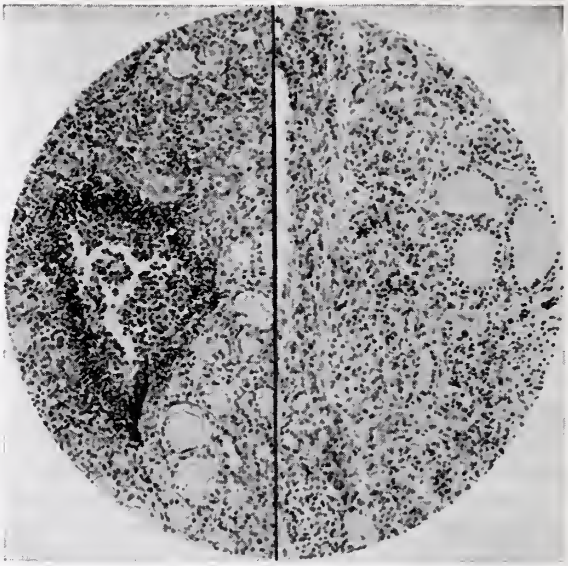

Fig. 6. High power fields from Fig. 5 showing a lymphoid follicle from the inert thyroid gland (to left), and the equally inert nodule (to right).

A review of the pathologic findings in 200 cases of toxic nodular goiter convinces us that in the great majority of cases the cause of the toxic symptoms is to be found in the gland proper and that the cellular reaction differs in no manner from that seen in Graves' disease. A review of the histories of these cases shows that most of them are persons with an unstable nervous system and that, while they may have had a mild low-grade nervousness over a period of many years, the initiation of their immediate toxic symptoms has been the result of some activating stimulus of relatively recent origin, similar to that giving rise to the initiation of symptoms in Graves' disease.

The lack of proper appreciation, on the part of the surgeon, of the fundamental pathologic histology of nodules in a toxic nodular goiter may result in poor judgment on his part in the technical procedure when these patients are brought to operation. One might say it is quite natural for the surgeon to be fascinated by the presence of nodules in the thyroid gland on which he is operating. *The practical point to be gained in this discussion is for the surgeon not to lose sight of the surrounding glandular tissue by focusing too much attention on the nodule.*

Conclusions

1. The use of the term "toxic adenoma" in toxic nodular goiters is misleading and should be discarded, for the nodules are not adenomas and are seldom the chief source of toxicity.

2. The majority of the nodules present in toxic nodular goiters are in such an advanced stage of degeneration that they have little if any functioning tissue remaining.

3. The chief source of the toxic symptoms in toxic nodular goiter or secondary exophthalmic goiter is to be found in the surrounding gland proper.

4. A simple colloid goiter may develop in an individual with a "Graves' constitution." As in Graves' disease, if the proper stimulus arises, this individual may develop a thyrotoxicosis which follows a pattern, both clinically and pathologically, fundamentally identical with that seen in Graves' disease.

5. An analysis of 200 cases of toxic nodular goiter or secondary Graves' disease confirms these conclusions.

6. The relationship between exophthalmic goiter and toxic nodular goiter is not confusing if one considers the toxic aspect of these two as one disease.

7. A proper appreciation of the fundamental pathologic histology of nodules in a toxic nodular goiter is essential to the surgeon. Such knowledge should aid him in the selection of how much and what portions of the thyroid are to be removed and may improve his postoperative results.

ABSTRACT OF DISCUSSION

JOHN P. GRIFFITH (Pittsburgh): I would like first to give a definition of simple goiter, after Kocher, who was the pioneer worker in thyroid surgery. A simple goiter is an enlargement of the thyroid gland, usually associated with hypertrophy but always associated with degeneration of the gland.

This simple definition explains many phenomena of thyroid problems as we see them today. It explains the normal basal metabolism estimation in the huge enlargements of the gland, where hypertrophy and degeneration balance each other. It can also explain the minus basal metabolism readings in huge goiters due to the predominance of degeneration of thyroid tissue.

Where hypertrophy overshadows degeneration, we have the subject of this discussion, namely, secondary exophthalmic goiter or toxic nodular goiter. I prefer to use the term toxic nodular goiter rather than secondary exophthalmic goiter for the reason that we never see exophthalmos, which is a constant finding in Graves' disease. I have often asked why we do not see exophthalmos in toxic nodular goiter. Do we not have the same pathologic picture—tall columnar cells lining the acini, with resultant increase in thyroxin production? Are we not assuming that all cases of hyperthyroidism are the result of a common activator?

The answer to the absence of exophthalmos in toxic nodular goiter may be explained by the nonexplosive appearance of hyperthyroidism which always accompanies true Graves' disease. Toxic nodular goiter is seen more often in the third, fourth, and fifth decades of life, whereas Graves' disease is encountered chiefly in the earlier periods of life. While it is true that patients with toxic nodular goiter will give the history of beginning tachycardia, palpitation, and nervousness at a certain definite time, I am sure most of them have had a slow persistent alteration in glandular activity over a long period of time. This slow insult to thyroid balance may allow accommodation of the tissues of the orbit. On the other hand, slow persistent hyperthyroidism over a period of years is more devastating to most structures than the sudden explosive nature of true Graves' disease. The end results of operative treatment in toxic nodular goiter are never as satisfactory as the results obtained in the properly treated case of Graves' disease, for the reasons given above.

The essayist has given a concise, clear description of involution, hyperinvolution, and hypo-involution of the thyroid gland, and I am sure it will help to clarify some of the problems heretofore classed as mysterious.

While it is true that the removal of a single nodule has cured hyperthyroidism in some instances, based on my own experience as well as that of other operators, I wish to emphasize the essayist's practical point of this discussion—not to lose sight of the surrounding glandular tissue by focusing too much attention on the nodule. An equally important point is a thorough study of the entire thyroid structure at the time of operation. A nodule may be left in the posterior area of either lobe that may be the cause of an unsightly lump in the future, much to the discomfort of the patient and the chagrin of the surgeon.

ADHESIVE TAPE AND THE OPEN WOUND

Open wounds soon become infected. Bacteria are omnipresent, immediately contaminating a denuded surface or other open wound. Within 6 to 8 hours they invade the tissues and the wound is infected—not simply contaminated. As deductions from this fact, a few suggestions in emergency or roadside surgery are of practical value.

First-aid measures need not be limited to treating primary shock, arresting gross hemorrhage, and splinting areas of fracture. Soap, water, and adhesive tape are nearly always available. After expeditious gentle cleansing, gaping wounds should be held closed with adhesive tape. Even if a physician is present and equipped to suture a wound, he may well elect this simple expedient pending superior facilities at the hospital. The important thing is to minimize contamination, thus avoiding infection. Gauze, or other material thought to be sterile, laid over an open wound will not prevent contamination during transportation. Its subsequent removal is painful and reopens blood vessels.

Simple closure of the wound with adhesive tape at the scene of accident will lessen pain and hemorrhage, will minimize contamination, and thus is a salient factor in the prevention of infection. It will facilitate superior secondary repair under favorable circumstances.

Another suggestion: Don't forget the value of adhesive tape bridges across a wound after early removal of stitches. Such support from the fifth to the twelfth day may prevent disappointment incidental to a widened scar!—*Rocky Mountain Medical Journal.*

The cost of taking a man who has tuberculosis into military service is around $10,000 per man. The cost of discovering tuberculosis in a recruit and rejecting him from service is $400.—*Exchange.*

Recurring Superficial Ulcerative Keratitis

JOHN B. CORSER, M.D.
Scranton, Pa.

IT IS my intention to discuss a type of ocular inflammation which rarely results in serious permanent disability to the eye but is exceedingly troublesome, due to the fact that it recurs from time to time and during each attack the patient suffers extreme ocular irritation. Examination of our records shows that while most of the cases under discussion have the ulcers situated near the margin of the cornea, they are by no means limited to that location and I would prefer that the title be changed to "Recurring Superficial Ulcerative Keratitis." Recurring superficial ulcerative keratitis is fairly descriptive of the condition, and the attacks, although differing in severity, are quite similar in each case.

The symptoms of a typical attack are as follows: The patient notices a sense of irritation of one eye similar to that caused by a foreign body. The irritation increases for 10 to 20 hours with little or no congestion of the bulbar conjunctiva. At the end of this time a few dilated blood vessels can usually be observed at the margin of the cornea, indicating the sector in which the ulcer or ulcers will develop. In this sector will be found one or more minute spots of infiltration in the cornea which may be flat or slightly elevated and do not stain. Aversion to light takes place at this time. Ocular irritation and congestion of the bulbar conjunctiva increase, and in a few hours the eye which has been unpleasantly dry becomes moist from lacrimation. The small infiltrated spot or spots will now be found to be flat or depressed ulcers which stain with fluorescein. Photophobia is increased and the eye feels as though there is a sharp grain of sand under the lid. The faint gray ulcers usually remain small and discrete, but occasionally coalesce into sizable ulcers of various shapes. There is a sensation of fullness high up in the posterior naris on the affected side early in the attack, which persists until the ocular inflammation subsides.

The attacks last from 5 days to 2 weeks and the time intervening between may be from one month to even 2 or 3 years. As a rule the attacks recur in the same eye. In the intervals these patients often complain that they are sensitive to light, and that use of the eyes for near work is attended with marked discomfort. More women seem to be affected than men, and the onset, in the majority of cases, is after age 40.

We have come to believe that allergy plays the major part in the cause of recurring superficial ulcerative keratitis and that repeated attacks of the disease can be prevented by the withdrawal of sensitizing foods from the diet. The treatment which we have used with quite satisfactory results is based on this supposition.

These patients present themselves for medical care when they are having pain, lacrimation, and photophobia, with a sensation of a foreign body in the eye. Office treatment consists in flushing the eye with boric acid solution, and either homatropine or atropine is instilled to relieve ciliary spasm and accompanying blepharospasm. An eyewash of holocain and boric acid is prescribed and bichloride ointment (1-5000) is used in the eye at night if the eye is especially irritable. A compress dressing is not used. For internal medication, a 3 per cent solution of ephedrine hydrochloride, 5 to 8 drops in one-half glass of water 3 times a day, is ordered. Ephedrine sulfate in capsules is equally effective. Some patients are made nervous and sleepless by ephedrine medication and the writer prefers the ephedrine hydrochloride solution because of the ease in adjusting the dose. Potassium chloride in 5 to 10-grain doses 3 times a day is prescribed to be used during the attack and whenever the patient feels that a future attack threatens. We believe that the drug potassium chloride is of some benefit in other allergic manifestations. In every case the nasal accessory sinuses are examined and we have been struck by the frequency of associated antral disease.

The patient is questioned in regard to food intake the week previous to the onset of the ocular inflammation. If relief from the distressing symptoms fails to take place in 2 days,

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Read before the Section on Eye, Ear, Nose, and Throat Diseases of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

the patient is limited to a milk diet until improvement is noted. Shellfish, pork, chocolate, and tomatoes are the foods that have most often been found to be the sensitizing agents.

There is much left to prove that recurring superficial ulcerative keratitis can be considered to be allergic in etiology, but the clinical findings seem to point to a strong possibility that sensitizing foods play an important part in the cause of the disease. Reasons for considering the disease to be an allergic manifestation are as follows:

1. The disease is repeated from time to time with the same symptoms.
2. Ephedrine medication seems to have a decided influence in relieving symptoms and cutting short the attack.
3. The withdrawal of certain foods from the diet either lessened the number and severity of the attacks, or seemed to relieve the patient entirely from recurrences.
4. Carelessness of the patients in not avoiding sensitizing foods brought on subsequent attacks.
5. Other allergic manifestations are found in these patients.

It must be stated here that the taking of sensitizing food has not always been followed by an attack of ocular inflammation.

The following histories represent the average of some 30 cases we have encountered in our practice:

Case Reports

CASE 1.—Mrs. B., aged 59, had attacks of inflammation of one or the other eye at intervals for 7 years. This case was under observation through a number of attacks. The usual prodromal symptoms were experienced and at the time of examination a small superficial ulcer or ulcers of the cornea, near, but not at, the limbus could be found. The symptoms, although not severe, caused considerable irritation and made use of the eyes impossible. The history revealed that the attacks occurred in the winter season and that in cold weather the breakfast frequently included buckwheat cakes. Withdrawal of buckwheat cakes resulted in a cessation of the trouble, only to return with an attack 2 years later when the same food was tried. Until death occurred 12 years later, there was little or no ocular irritation. This case was encountered some 30 odd years ago and it was considered at the time that the buckwheat cakes simply disagreed with the patient's digestion.

CASE 2.—Miss K., aged 44, was an invalid and was having attacks of severe ocular irritation with intense photophobia. There were typical prodromal symptoms of a foreign body with increasing irritation and photophobia. Examination of the eye in each attack would show a pin-point superficial ulcer with but slight bulbar congestion. The eye itself gave little evidence of ocular inflammation. The patient had nasal cavities typically allergic, with multiple sinus involvement, but her general condition would not permit surgical treatment for the sinus condition. Skin tests for wheat and chocolate were positive. Treatment as outlined was of benefit in shortening the attacks but failed entirely to prevent subsequent attacks. This patient was a confirmed invalid and died 4 years after coming under observation. This case of typical recurrent superficial ulcerative keratitis did not respond satisfactorily to the treatment as outlined.

CASE 3.—Mr. C., age 44, had 5 attacks of severe inflammation of the right eye during the 5 years previous to his first consultation, and the eye had been irritable on 2 other occasions. The eyelids were swollen with profuse secretion. The conjunctiva of the lids was swollen and red. There was intense congestion of the bulbar conjunctiva and the cornea appeared soft with an irregularly shaped ulcer midway between the limbus and center of the cornea at 10 o'clock. About the ulcer were maculae involving the pupillary area, evidently the scars of previous ulceration. Vision was reduced to hand motion, and the eye had the appearance of an infected ulcer except that there was no yellowish slough. The patient was treated with boric acid, hot compresses, and atropine, and it was 5 weeks before he returned to work.

The following winter he presented himself with a similar condition equally serious. This time it was suspected that oysters might have caused his eye trouble and he was advised to avoid shellfish of all kinds in his diet. Ephedrine hydrochloride internally was used besides the local treatment and 2 days later the eye was much improved. On the fourth day the bulbar conjunctiva had cleared and the ulcer had almost healed. On the next visit, 4 days later, the patient returned with the eye in a condition worse, if anything, than at the first consultation. It developed that he had doubted that oysters could cause his eye condition and he had eaten a plate of raw oysters. Treatment was resumed and recovery took place in 2 weeks. He has not had a return of the trouble during the past 9 years. He returned recently for a change of glasses and the corneal maculae resulting from the ulcers had almost cleared.

CASE 4.—Mrs. T., age 58, gave a history of recurring attacks of ocular inflammation the previous 3 years. Use of the eyes during this whole time was attended with difficulty and impossible during the attacks. The patient presented a typical case of the disease under consideration. There was marked irritation of the eye with but little apparent inflammatory reaction. Examination showed a very small ulcer on the cornea near the limbus of the affected eye. The history revealed that pork was a part of the diet. Treatment as outlined above was instituted and resulted in recovery much earlier, according to the patient, than in previous attacks. The patient was advised to eliminate pork from her diet. Mrs. T. has had 2 recurrences during the past 5 years after eating pork, which had been considered the sensitizing food.

CASE 5.—Mr. O., age 42, an office worker, first called for treatment in November, 1926, complaining that his eyes were irritable at times, especially when using them for near work. There were periods when they were quite comfortable. Visual acuity and muscle balance were normal. Under homatropine refraction, the right eye accepted a +.37 sphere and the left eye a +.50 sphere. No corneal involvement was observed. Both eyes continued to be irritable periodically, but the condition did not become severe until Apr. 28, 1931, when he appeared with a small superficial ulcer of the right eye located near the margin at 8 o'clock. It was suspected at this time that the eating of lobster might be the cause of the eye irritability and the patient was advised to exclude shellfish from his diet. Shortly afterward, Mr. O. moved to Massachusetts and remained there for 5 years. He had always been very fond of lobster and the temptation proved too much for him on 3 occasions. Each time corneal ulcers developed. He has avoided shellfish for the past 4 years and his eyes have been perfectly comfortable during this time.

Case 6.—Mr. C., age 66, began to have attacks of extreme ocular irritation at 1 to 3 month intervals when he was 48 years old. Each time after the prodromal symptoms, lasting 12 to 20 hours, an ulcer would develop and make the patient miserable for 10 days to 3 weeks. For 9 years the patient suffered the attacks and was unable to use his eyes for reading between periods of active inflammation. A number of our leading ophthalmologists were consulted without relief being obtained. Ten years ago a particularly severe attack followed attendance at a clambake and the possibility of shellfish sensitization was considered. All shellfish were eliminated from the diet and there was no return of the trouble for 11 months. At this time another attack occurred after eating pork and cabbage. All pork products were then denied the patient. Moderately severe attacks were experienced at the holiday season for the following 3 years. Chocolate candy was then suspected as another sensitizing agent. No midwinter attack has occurred since its elimination. This patient, during the past 7 years, has had an average of one attack per year with very mild symptoms, in no way comparable to previous experiences. The eyes have been used for near work and reading with perfect comfort the past 10 years. If allergic, the sensitizing agent causing the mild attacks has not been discovered.

The 6 cases here reported represent fairly well the variations of the disease under consideration.

There may be a question as to whether these cases of recurring superficial ulcerative keratitis can be considered allergic in etiology. Laboratory or scientific evidence is not offered. Nevertheless, the clinical experience of my associate, Dr. Elmer B. Shaul, and myself has shown that the withdrawal of certain foods from the diet has given most satisfactory results in preventing repetition of attacks.

ABSTRACT OF DISCUSSION

Hunter H. Turner (Pittsburgh): The subject of Dr. Corser's paper has been of keenest interest to me for many years. In many respects these ulcers are analogous to the phlyctenular efflorescences seen in children. I note that in several of Dr. Corser's patients the ulcers always appeared in the same eye. This is not always true, as both eyes may be affected, although seldom at the same time. Diet is unquestionably a matter of prime importance in the control of these active cases and in the avoidance of recurrences. Why this is true becomes apparent if we analyze the known factors. How can a dietetic indiscretion precipitate a persistently unilateral pathology of this kind, as we know it does? If a patient be allergic, he is certainly so on *both* sides! There must be a third element, a connecting link, which may be unilateral or bilateral, which is affected by the dietetic fault in such a way as to precipitate secondary changes in the homolateral eye.

Dr. Corser mentions several symptoms which clearly indicate the answer; namely, the fullness of the homolateral naris, the presence of antrum infection, and third, the complaint of these patients that even between acute attacks, when the eyes are negative objectively, there is a definite soreness elicited by pressure on the globes and in convergence. The only possible answer is a homolateral focus of infection which, in the great majority of these cases, will be found to be a hyperplastic ethmoiditis. Ulcers of this type may be secondary to foci in the teeth or throat, but when they are, we do not find the recurrences precipitated by dietetic faults, and there is no soreness on pressure or convergence between acute attacks. A chronic hyperplastic ethmoiditis is very frequently associated with changes in the homolateral antrum (secondarily involved—as the nose and throat men will agree is true) and a hypertrophied middle turbinate, which may help to obstruct sinus drainage.

These conditions cannot always be diagnosed or ruled out by nasal inspection, as in many cases there is no evident discharge from the ethmoidal ostium or crusting. Roentgenograms will show many of them, but in most cases the diagnosis can be made with certainty on the basis of the eye findings alone. The outer wall of this sinus forms the inner third of the bony orbit and is frequently the seat of defects in continuity. Under these conditions the diseased, pyogenic mucoperiosteum of the sinus is brought into very intimate anatomic relationship with the orbital periosteum and the lymphatic channels of the orbit. The anterior ethmoidal vessels with their lymphatics also pass into the anterior orbit. It involves no strain upon the imagination to conceive how bacterial proteins could be backed up from an infected and obstructed ethmoid, reach the anterior segment of the eye by way of the lymphatics, and there produce the macroscopic and cellular changes shown in these cases, without the presence of organisms in the secondary lesions. The soreness on pressure, complained of by these patients, is produced by pressure transmitted via the globe upon the inflamed tissue in juxtaposition to it. The soreness on convergence is elicited by the rotation of the globe against the same area. I have presented 2 papers which are pertinent: (1) "The Etiology of Phlyctenular Ophthalmia," read before the Section of Ophthalmology of the A. M. A. in June, 1918, and (2) "Ocular Evidences of Pathology in the Ethmoidal Labyrinth," read before this section in September, 1918. I freely admit that both these papers were good and just as pertinent today as they were then.

How does faulty diet affect these cases?

You all know what happens to an ordinary marine sponge which is dropped into water. Its bulk is increased considerably, not because there is more sponge but because it has taken up a great quantity of water. The atonic, pyogenic, hyperplastic tissue which is found within the ethmoid sinus in these cases, as well as in the hypertrophied middle turbinate which is frequently associated, will increase greatly in bulk under certain conditions so as to produce a fullness or actual blocking of the nostril and definite intra-sinus pressure.

For many years I have appreciated the fact that to approach this condition adequately from a dietetic viewpoint we must do so *both* from the angle of allergy and acidosis. Whether allergy produces this change through the autonomic nervous system or not is an academic question which we can safely leave to the laboratory men. We know it to be a clinical fact, by observation over many years in thousands of cases, that a food to which a patient is allergic will produce a marked swelling of the nasal tissues which will persist until the disturbing element has been eliminated. The reaction of these tissues to certain acids is evidently on the basis of an increase in the hydration capacity of the component colloids.

The acids to which these patients react, almost without exception, I usually classify in 3 groups: (1) acid-bearing fruits and drinks; (2) foods, not necessarily acid in themselves, which ferment in the gastro-intestinal tract and so produce harmful acids and toxins as by-products; (3) acids developed in the large bowel as a concomitant of constipation. Time will not permit an adequate discussion of this phase. I would like to state only in passing that the outstanding year-round offenders are raw apples, tomatoes, sauerkraut, shellfish, the large fish (tuna, halibut, and haddock), chocolates, buttermilk, and all carbonated drinks. These patients should all be checked from an allergic viewpoint, put on an acid-free dietetic régime, and in addition be given a mild antacid 2 hours after meals. My favorite preparation for this purpose is petrolagar with milk of magnesia. This not only insures alkalization of the bowel but facilitates evacuation. It is understood, of course, that if there is an intranasal obstruction to sinus drainage, it should be corrected mechanically. Some cases may require an exenteration of the ethmoid.

If these patients are treated with these facts in mind, it will be found that the ulcers will not only undergo rapid resolution but that recurrences will be obviated. Of course, if the patient will not co-operate, recurrences may be expected. However, it has been my experience that if the situation is explained adequately, the patient will be glad to co-operate fully for his own benefit.

Leonard G. Redding (Scranton): Dr. Corser did not bring out one point. Why does this condition occur in most cases in the fourth and fifth decades of life? Certainly there must be some element responsible other than those mentioned by Dr. Turner. There is the factor of internal secretion and a number of other things that come with the change of life at that time. Until we can answer this question, we will not arrive at the final solution of this problem.

Dr. Corser (in closing): I am sorry that I gave the impression that this particular trouble always recurred in the same eye. I think I mentioned clearly in the paper that the affection may recur in either eye but the attacks are more often limited to one.

Our experience would lead us to believe that while sinus disease may be a contributing factor in the etiology of some cases of recurring superficial ulcerative keratitis, it must be of minor importance, for many cases have had no evidence of sinus involvement and others that have been relieved continue to have diseased sinuses.

GENERAL PRACTITIONER

In an editorial in *The Journal* for September, 1940, reference was made to the ideology of certain groups of specialists in which the general practitioner was viewed as an agent rather than employer of the specialist.

The report of the Graduate Commission which initiated that editorial has also stimulated quite general comment as to means of protecting the man in the field from this short-sighted reversed domination. Some of the "throw-away" type of journals have made use of the aroused interest to attack the setup of the American Medical Association, pointing out the predominance of specialists in the controlling positions of the national organization. It is hard to conceive, even if this were true, that these men have other than the best interests of the medical profession at heart in their deliberations and decisions. Nevertheless, it is easy to lose sight of the general practitioner's problems. They often seem trivial to those whose viewpoints must include the broad picture of medicine as a whole. Just as one or two pin holes do not destroy the beauty of a great picture, enough pin pricks do irreparable damage and something valuable is lost forever. Therefore, it would seem worth while to repair the pricks in the morale of the profession as well as to prevent further irritating practices before a rift may be caused in the unified profession.

It seems to be a challenge to the officers of the A. M. A. and the delegates thereto. One possible remedy might be the inclusion of a practicing general practitioner on each of the specialist boards. There are many of these men—the type of physician who has a broad viewpoint of medicine as well as a personal knowledge of the practitioner's problems. Another remedy which has been frequently mentioned is the establishment of a general practice board. This may have merits, though its function seems rather obscure. Possibly this board, acting as a liaison group between the profession in general and the specialists, would render yeoman service. The mechanism is not of serious consequence. The result must be accomplished; that is, the family physician must be preserved if the private practice of medicine is to be continued; to preserve the family physician, he must be encouraged in the *general* practice of medicine. The specialist must be his advisor and councilor—a specialized instrument to be used for the special case by the general practitioner who should be educated as to how, and when, and where to use this instrument.—*Journal of the Michigan State Medical Society.*

EXERCISE WON'T PREVENT DOUBLE CHINS

Exercises for the neck and throat, frequently advocated by "beauty" articles, cannot prevent double chins, *Hygeia, The Health Magazine* replies in answer to an inquiry.

"If a person grossly overeats so that he accumulates masses of fat, exercise cannot keep up with the process of fat storage," *Hygeia* states. "Furthermore, there is no evidence that the amount of exercise which one would take by contraction of the muscles of the neck would have any local effect. Even the constant activity of the abdominal muscles in respiration, 12 to 15 times a minute at least, throughout hours, days, weeks, and years, does not prevent the development of immense masses of fat between the abdominal muscles and the skin."

TOTAL PNEUMONECTOMY

Indications and Practical Problems

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THERE is no longer need to regard persons who have had one lung removed in the light of medical curiosity. The number of surgeons qualified to successfully complete a pneumonectomy is increasing; diagnostic methods and surgical technics are constantly improving. Inasmuch as the indications for the operation are being broadened, there should be no dearth of patients. Fifteen thousand deaths occur each year in this country from primary cancer of the lung,[1] representing 15,000 patients that at one stage in the course of the disease were potentially operable. And primary cancer affords but one indication, though perhaps the most important one, for total pneumonectomy.

Indications and Contraindications

According to Jaffé, primary lung carcinoma is exceeded only by carcinoma of the stomach and intestine in frequency. In an adult, atypical pneumonia or pneumonia which fails to resolve is often the earliest sign of pulmonary cancer. Unproductive cough, hemoptysis, or a wheeze are likewise early symptoms. By the time weight loss, chest pain, and atelectasis appear, the pathologic process is usually advanced and the condition may be inoperable. Careful investigation of the gastro-intestinal and genito-urinary tracts, to rule out the possibility that a primary focus exists there, is essential. The presence of pleural effusion and the involvement of supraclavicular or cervical lymph nodes usually connotes an inoperable condition.

Bronchoscopy is an important aid, but in several of our cases it has been of no value in establishing the diagnosis because the tumor failed to extend into the bronchial lumen. Aspiration biopsy was positive in one case when all other methods of preoperative diagnosis were inconclusive. The roentgenogram furnishes a diagnostic aid of prime importance. Planigraphy was helpful in another of our cases in showing an intrabronchial tumor, which the usual films failed to demonstrate, and which the bronchoscope could not reach. We have had no experience with examination of the sputum for tumor cells, although others have reported success with this method. Finally, there are cases in which the diagnosis of primary pulmonary carcinoma can be definitely established only by open thoracotomy. In 5 of 11 patients operated upon for carcinoma, the condition was found to be inoperable, and total pneumonectomy was performed in the other 6.

Radiologists concede that roentgen therapy of pulmonary cancer is at best palliative, that surgery offers the only chance for cure. Controversy of recent months has revolved about the question of the malignancy of certain adenomatous tumors of the bronchus. At first these were considered to be malignant, and then evidence was presented which placed many of them in the benign group. Lately, the pendulum has again swung toward classifying most of these among the malignant tumors. Their position is probably akin to that of the adenomas of the large bowel, which if not frankly malignant must at least be considered as precancerous lesions. But all are agreed that whether the tumor is of the squamous cell, adenomatous, or pleomorphic type,[2] radical surgery alone offers a chance for cure.

Diffuse bronchiectasis and multiple areas of pulmonary suppuration involving an entire lung offer another indication for total pneumonectomy. Foul breath, fetid sputum, cough, anorexia, hemoptysis, and recurrent episodes of pneumonia indicate the necessity for operation. In such cases knowledge of the condition of the contralateral lung is important. This is best obtained by bronchograms, made by introducing an opaque agent such as lipiodol into the bronchi just before an x-ray picture is made. The pres-

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ence of extensive disease in the remaining organ ordinarily prevents surgical treatment. However, Graham[3] has recently reported a case in which the entire left lung and the lower lobe of the right lung were successfully removed in the same patient. In one case[4] pneumonectomy was performed for extensive unilateral pulmonary suppuration. Removal of the diseased lung was complicated by the very dense adhesion of the parietal and visceral pleura. The degree of pleural symphysis appears to be dependent on the extent and duration of the underlying infection. This affords a strong argument against undue procrastination in operating upon these patients.

Dolley and Jones,[5] among others, have advocated total pneumonectomy in cases of pulmonary tuberculosis. They list the following as indications:

1. When such an operation offers the only chance of recovery.
2. Intractable hemorrhage.
3. Complicating bronchiectasis.
4. Persistent cavity after thoracoplasty.
5. Lower lobe involvement after thoracoplasty.

To this list of indications we would add severe bronchial stenosis.

In 22 collected cases Dolley and Jones found 5 patients dead, 8 cases arrested, and 9 improved. Our own conservatism is reflected in the fact that, although we see a great many cases of surgical pulmonary tuberculosis, we have thus far performed no pneumonectomies. We feel, however, that pneumonectomy is indicated in selected cases and it will probably be done with increasing frequency in the future. Carcinoma and tuberculosis may be present in the same patient, in which case the presence of tuberculosis does not contraindicate surgery. In a recently operated case of pulmonary carcinoma, tubercle bacilli were found in the sputum for the first time after pneumonectomy.

Preparation of the Patient

The value of preliminary artificial pneumothorax as a preparation for pneumonectomy is now well established. We prefer to give air in amounts of 500 c.c. or less every day or every other day for approximately 10 days prior to operation. Preliminary pneumothorax is sometimes an aid in diagnosis, but its more important use is to accustom the circulatory and respiratory systems to function in the presence of diminished vital capacity and alteration of pulmonary circulation. Ability to obtain a good preoperative collapse does not indicate operability in cases of carcinoma. The absence of adhesions does, however, simplify the operative procedure and indicates a minimum of pulmonary suppuration in the underlying lung.

Anemia may be present as a secondary effect of hemoptysis, carcinoma, or chronic suppurative disease. It should always be combated by preoperative blood transfusions until the hemoglobin has been elevated to approximately normal levels.

Bronchoscopic aspiration as a preparatory measure to pneumonectomy is exceedingly valuable. This is especially true in cases of suppurative disease, but in our experience there is more or less infection associated with every case of carcinoma of the lung. While it is seldom possible to absolutely remove all secretions, a valuable service can be rendered by the bronchoscopist who is able to aspirate mucus and pus immediately prior to operation. Such treatment prevents flooding of the remaining lung during operative manipulations.

Anesthesia

There is no agreement among surgeons as to the ideal anesthetic and its method of use. Local anesthesia, spinal anesthesia, avertin, ether, ethylene, and cyclopropane together with various combinations of these have been advocated. Our own preference is for cyclopropane administered through an intratracheal catheter. We feel that this has the advantage of giving the anesthetist complete control of the patient's respiratory efforts should these at any time fail, as they occasionally do. Knowledge that respiration can be simply and efficiently maintained by the anesthetist removes a great burden from the mind of the surgeon. The presence of a tube in the trachea also enables the anesthetist to aspirate secretions which may be expressed from the lung being removed and which at any moment may jeopardize the airway. We feel that in several of our cases a calamitous death on the operating table has been averted because of the presence of an intratracheal tube.

Operative Technic

Several incisions are recognized in the approach to pneumonectomy. We have always used the incision of Rienhoff,[6] in which the patient lies on his back, the optimum position for unhampered respiration. Incision is made in the third interspace from the sternum to the midaxillary line, and after opening the pleura a mechanical rib spreader is introduced. This has never failed to give us sufficient exposure, nor has rib resection been necessary. The pleural reflection of the pericardium in the hilum region is incised, exposing the pulmonary vessels. These are ligated individually between silk ligatures and cut. We have followed the suggestion of Rienhoff, in performing the operation in 2 stages on only one occasion. However, we were disappointed to find that inflammatory reaction which had occurred around the hilum in the 2 weeks between stages made the second stage more difficult than the first. The main purpose of the two-stage operation was thereby defeated. In the future we would perform two-stage operations only in a poor operative risk or if the condition of the patient during the course of the dissection of the hilum were to render completion of the operation inadvisable.

The most important factors in obtaining successful results following total pneumonectomy are the prevention of infection of the pleural cavity and the prevention of a bronchial fistula. Infection of the pleural cavity may take place without the presence of bronchial fistulas as a result of spilling of infected material at the time of operation. When a bronchial fistula develops, infection of the pleura is inevitable.

While it is preferable not to drain the thoracic cavity following pneumonectomy, the presence of an intercostal tube drain for at least 48 hours is a safer plan. The drain should lead to a bottle at the bedside and the end of the tube is kept under water at all times. In this way a negative pressure can be maintained which acts as a safeguard in preventing rapid mediastinal shift. Arcé[7] advocates packing of the hemothorax with vaseline gauze, which is left in place for 2 weeks. This technic, while not carried out extensively in this country, should probably be given serious consideration. The gauze packing temporarily obliterates a large dead space which is a fertile field for infection and at the same time acts as a stabilizer for the mediastinum.

Bronchial closure is rendered difficult by the cartilaginous walls of the main stem bronchus, its poor blood supply, and the fact that in the diseased state it is usually surrounded by inflammatory lung and fibrous tissue. The latter fact makes clean dissection of the bronchus often difficult so that the tendency too often is to use transfixion sutures which encompass both bronchus and adjacent inflammatory tissue. Such sutures usually hold from 2 to 7 days, during which time they cut through the surrounding inflammatory tissue. Consequently, their hold on the bronchus is loosened. A bronchial fistula of a more or less severe degree then develops. We have demonstrated[8] by experimental methods that the ideal closure of the bronchus is a double ligature reinforced by sutures in which the bronchial blood supply is preserved. The hilum structures are then buried under a layer of pleura sutured over them. Unfortunately, conditions found at operation are usually such that a comparable closure cannot be obtained. When a bronchial fistula develops, it may be followed by rapid and diffuse subcutaneous emphysema, unless a drainage tube is already present or the wound is promptly opened. Subcutaneous emphysema offers no serious hazard in itself. The main danger following development of a bronchial fistula is the tendency of these patients to develop a pneumonitis in the remaining lung and empyema on the operated side.

Several means of re-enforcing bronchial closure have been attempted thus far, but none have met with startling success. Among these may be mentioned the use of fascia as a suture and ligature on the bronchus and the tying of a piece of muscle over the bronchus. In a recent case we used a pedicle flap borrowed from the pectoralis major muscle and stitched as a reinforcement over the hilum area. While we consider this procedure based on sound surgical principles, it failed because of an apparent lack of blood supply in the pedicle graft which resulted in death of the engrafted muscle. We feel, however, that future successful closure of the bronchial stump will be attained with the aid of some similar type of graft.

Postoperative Care

Postoperative management of these patients is a most important part of their treatment. Immediately following operation the patient is placed in bed with the feet elevated and the head lowered. This allows free drainage of the trachea by gravity without the necessity for cough. The patient is kept in this position for approximately 24 hours. If at any time during the postoperative period an undue amount of moisture appears to be present in the remaining bronchus or trachea, bronchoscopic aspiration should immediately be done no matter what the hour. Such bronchoscopic aspiration should be repeated as often as is necessary.

Pain is not a prominent symptom after pneumonectomy; therefore, morphine and atropine should be used as seldom as possible. Blood transfusion is of value in combating postoperative shock and should be used judiciously as required. The need for blood should be checked daily by blood counts and hemoglobin estimations. We have found the oxygen tent to be of inestimable value in the immediate postoperative period. Some of our cases were able to get along without an oxygen tent after 3 or 4 days. No rule can be given for the proper length of time to use oxygen. This must be dictated by the individual needs of the patient.

Thoracic surgery is a lusty infant among the surgical specialties. Total pneumonectomy is one of its spectacular achievements. Much has been accomplished and much more is still to be learned. To this end it is important that clinician, bronchoscopist, roentgenologist, anesthetist, pathologist, and surgeon work together to achieve their common goal.

Summary and Conclusions

1. The indications and contraindications for total pneumonectomy in cases of pulmonary carcinoma, bronchiectasis and pulmonary suppuration, and pulmonary tuberculosis have been discussed.

2. Artificial pneumothorax, blood transfusion, and bronchoscopic aspiration are valuable aids in preparing patients for operation.

3. Intratracheal cyclopropane anesthesia has been advocated.

4. The type of incision, certain technical details, and a new method of aiding closure of the bronchial stump have been discussed, as have the primary considerations of postoperative care.

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ABSTRACT OF DISCUSSION

JULIAN JOHNSON (Philadelphia): This subject has been presented in a very clear-cut manner. There is not much I can add except to give a few little differences in the management of those cases in which some of you may be interested.

The real problem in carcinoma of the lung is to make an early diagnosis. At present about one-half of the patients explored are found to be inoperable. It is important to make the diagnosis before the operation, since exploratory thoracotomy for an undetermined pulmonary lesion is often unsatisfactory. If the lesion is in the center of the lung, the lung would have to be cut open to expose it. Such a procedure in itself may necessitate the removal of the lung. Thus, by and large, it is best to decide before opening the chest whether the lung is to be removed if it is operable.

Regarding bronchial adenomas, I believe most of us are going back to the idea that they are potentially malignant. It is our belief that they will kill the patient if left alone, but that if removed early, a complete cure can be expected.

Many practitioners throughout the country are using pneumothorax in the preoperative preparation of the patient. We found that pneumothorax was impossible in many instances because of adhesions. However, these patients get along just as well in spite of this. We have discontinued the use of the pneumothorax preoperatively because of this experience.

I think that Dr. Behrend might have emphasized the anesthesia problem a little more. The recent enthusiasm and advance in the field of thoracic surgery may certainly in large part be credited to the medical anesthetists who have made it possible to open the thoracic cage with impunity. By the use of positive pressure intratracheal anesthesia the anesthetist can now take over the patient's respirations entirely if necessary.

It is preferable not to drain the pleural cavity after pneumonectomy. The cavity becomes filled with serum which gradually contracts and the opposite lung comes over to a considerable degree. If the pleural cavity is drained originally or secondarily because of infection, a thoracoplasty is necessary to collapse the residual cavity. This prolongs the morbidity by several months. In the patient with carcinoma of the lung, where the life expectancy may not be so very long anyway, this prolonged morbidity is to be avoided. In the case of the patient with bronchiectasis or multiple lung abscesses, the patient will have a normal life expectancy if he recovers from the operation. Therefore, drainage with a greater safety as to mortality, although having a great morbidity, is justifiable.

The type of incision is a matter of choice. With the Rienhoff incision in the third interspace anteriorly, it is difficult to free adhesions from the diaphragm if present. I prefer the Crawford incision which removes the greater part of the fifth rib. This gives a wide exposure of the chest cavity.

I believe that the mortality of total pneumonectomy is largely the mortality of the disease and associated diseases rather than of the operation itself. If the patient is in good condition, except for the affected lung, his chances of surviving a total pneumonectomy are excellent. On the other hand, an elderly patient with heart disease is a poor risk. We have had 7 cases at the University Hospital within the past year and a half who have been subjected to total pneumonectomy. They were all under 45 years of age and in relatively good condition. There was no mortality in this group, although one patient died about 6 months later of metastasis. This demonstrates that the operation itself is not a devastating procedure and that these patients will usually recover if they are carefully watched. The major mortality of total pneumonectomy will be found in the patients who have associated organic disease or in whom the diseased process is so extensive as to materially alter the patient's ability to stand major surgery.

SYMPOSIUM ON ACNE VULGARIS

Clinical Phases and Differential Diagnosis of Acne Vulgaris

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ACNE vulgaris presents many clinical phases. Although usually easy to recognize, it still presents a wide variety of clinical types, some of which may be confused with other conditions. In this paper the different types of acne will be discussed, also the conditions to be differentiated.

Stokes and Sternberg recently reported an exhaustive study of acne, listing 13 causative factors. However, there is still considerable diversity of opinion as to the causes and treatment of acne, as brought out by a recent survey conducted by the *Journal of Investigative Dermatology*. The widest divergence was noted in regard to the rôle of diet. An understanding of these factors would be of great help in outlining rational treatment for differing clinical pictures.

These clinical pictures range from the simple comedo and seborrhea up to, and including, the huge dissecting abscesses of acne conglobata and the disfiguring scars of keloidal acne.

The essential lesion of acne is the comedo, or blackhead. It is a hyperkeratosis of the pilosebaceous apparatus, and it is generally agreed that it is caused by some hormone associated with the sex glands. It makes its appearance usually at puberty and is distributed over the face, neck, chest, back, and arms. The first lesions are usually noted on the forehead, nose, and chin. The black color is not caused by dirt, but by a chemical change in the keratin.

Seborrhea or excessive oiliness of the skin is a second finding of much importance in acne. Its cause is variously ascribed to heredity, hormones, infection, nervous influences, and diet. It is the factor concerning which there is the greatest difference of opinion as to cause. Seborrhea plays a large part in most acne, but may be absent in some.

The third clinical finding is infection. Tremendous differences in bacterial type and virulence reacting in individuals with widely differing powers of resistance produce the multiform infective phases of acne. A large number of bacteria have been isolated from acne pustules, but opinions differ as to their pathogenicity. Certainly, the pyogenic organisms such as staphylococci and streptococci can be found in practically all abscesses. Fungus organisms, especially those concerned with seborrheic dermatitis of the scalp, also play an important part, as shown by rapid clinical improvement in facial acne obtained by controlling the scalp focus of infection. Differences in powers of resistance produce pictures of strong reactivity in one case and almost complete absence in another. The amount and nature of scarring is markedly influenced by the presence of keloidal tendencies.

The interplay of these 3 clinical findings can produce any of the phases of acne. There are 8 clinical types of acne; namely, comedo or punctate, papular, pustular, indurated, cystic, conglobate, keloidal, and excoriated.

The comedo type or acne punctata is usually seen in children from 10 to 15 years of age. It occurs first about the nose or forehead and may never spread beyond these areas. Usually, however, where the acne tendency is strong, large numbers appear anywhere on the face, chest, back, or shoulders. The element of seborrhea may or may not be present at this stage. Infection has not yet occurred. Proper treatment at this time may arrest the disease or it may progress to the next or papular phase.

In the papular phase, infection begins to make its appearance. The lesions become elevated or papular and assume a reddish color. The infection in this type very frequently has a scalp origin. The distribution is similar to that in the comedo type except that the first lesions usually occur near the hair line. If the condition stops at this stage, no scars will result. However, continuation and spread of infection with in-

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oculation of more virulent organisms, or a decrease in resistance, may produce the pustular phase.

The pustules in this phase vary from pinpoint to pea-sized or larger. When the infection, usually as a result of injury, spreads beyond the comedo, the abscesses may become confluent and undermine large areas. If the tissue reaction is good, considerable induration will occur. This type is called indurated acne. Where the tissue reaction results only in a flaccid, cystic abscess, it is called cystic acne. Extreme and widespread examples of the latter are called acne conglobata. When the destructive phase is followed by excessive scarring, it is called keloidal acne.

Ingestion of excessive carbohydrate which increases the water balance of the skin favors infection. Iodides and bromides excreted through the pilosebaceous apparatus apparently aggravate any infection there. Fondling, picking, squeezing, or rubbing the skin, as well as faulty removal of comedones, tends to aggravate and spread the infection. Focal infections in teeth, tonsils, appendix, etc., or intercurrent infection may cause aggravation.

Acne excorié occurs in young women who have very small comedones and a marked urticarial tendency. Picking at comedones results in an itching swelling, the top of which is scratched off, leaving an excoriation. The nervous factor is important in these cases.

Differential Diagnosis

Typical acne offers little diagnostic difficulty. However, several diseases may show some similarity to acne in certain phases. The presence of the essential lesion, the comedo, associated with seborrhea and follicular pustules distributed over the face, chest, and back is sufficient for a diagnosis of acne vulgaris.

Acneform eruptions may occur in the usual acne areas in addition to lesions elsewhere, such as on the thighs. They may be caused by toxic external contacts such as oil, wax, tar, and other chemical compounds in workers in industries where these are used.

Internal factors such as the ingestion of iodides and bromides or foods like milk, potatoes, tomatoes, oranges, and nuts can be found in some cases. In my experience, milk has been the commonest food offender.

The usual acneform eruption is papular or papulopustular and comedones are absent. The diagnosis is made on the clinical appearance, history of ingestion, and favorable response to elimination of the suspected cause.

The pyogenic infections may occasionally simulate acne. Impetigo contagiosa is an acute vesicopustular, crusted eruption of rapid evolution usually found near the orifices. It is mentioned only because it occurs frequently associated with a pustular acne. Picking at the acne lesions can be the cause of the impetigo.

Sycosis vulgaris is a chronic pyogenic hair follicle infection usually confined to the bearded areas of the cheeks and upper lip. Frequently an associated nasal infection is found. It is resistant to treatment.

Furuncles are acute streptococcic infections of hair follicles with more pain, heat, redness, and swelling. Sloughing and core formation are characteristic.

Ringworm on the face is usually of animal origin and is seen chiefly in farmers or dairymen. The earliest lesions are papulosquamous, frequently circinate, and in the course of a week or two develop into deep, soggy abscesses or kerion. The diagnosis may easily be confirmed by examination of a loose extracted hair under a microscope after KOH preparation.

Seborrheic dermatitis of the scalp coexists in a large number of acne cases. Occasionally, the secondary lesions of seborrheic dermatitis on the face may simulate acne. However, the lesions are greasy and scaly and are associated with infection in the scalp. Its response to treatment is more rapid than in acne.

Sebaceous adenoma of the Pringle type may resemble acne. It usually occurs much earlier in life and is associated with mental deterioration. The essential lesion is a small, reddish papule, located in the rosacea area of nose, cheek, and chin. Acquired sebaceous adenoma occurs in later life. The papules vary in size, have a central pore, are usually yellowish and firm, and occur on the face.

Lupus vulgaris is very common on the face. The essential lesion is the apple jelly papule or nodule in the skin. Ulceration is common and scarring considerable. The progress is usually slow. Other evidence of tuberculosis may be found. The distribution is usually asymmetric and not confined to the acne areas. Tuberculides such as acnitis and folliclis may be differentiated by the presence of the papulo-necrotic lesion in the follicle. Other evidence of tuberculosis may be found.

Boeck's sarcoid may roughly simulate acne indurata. However the lesions are commonest over malar areas, are firm, red nodules, and do not break down. Biopsy is characteristic.

Tuberculosis colliquativa may be impossible to differentiate from acne conglobata. Proof of tuberculosis by guinea pig inoculation may be had.

Lupus erythematosus produces erythematous, elevated plaques with follicular plugging, atrophy, and telangiectasia usually located near the nose, cheeks, and ears. It is aggravated by sunlight. It is usually dry and does not become pustular.

In its secondary stage, syphilis of the papulopustular type may simulate acne very closely. However, other evidences of syphilis, such as mucous membrane lesions, adenopathy, condylomas, or a healed or healing primary lesion, will make the diagnosis easy, if it is suspected.

Tertiary syphiloderm on the face or back may simulate acne indurata. However, the lesions are nodular, not pustular, frequently ulcerate, are asymmetric, indolent, indurated, painless, show an arciform configuration, and heal with a characteristic atrophic scar.

Rosacea frequently is associated with acne. It is characterized by its later onset, its location on the central areas of the face, and the essential rosacea flush. It frequently has pustules with much redness and little pus.

Summary

The comedo is the only constant finding in acne vulgaris. Seborrhea, infection, allergy, and hypertrophic scarring are complications which when superimposed greatly modify the original picture.

If these facts are kept in mind, the differential diagnosis should offer no difficulty.

Note: The discussion of the papers by Drs. Rickloff, Butterworth, and Twining follows Dr. Twining's paper.

The Rôle of Heredity in Acne Vulgaris

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IN spite of its widespread acceptance, the assumption that acne vulgaris is a hereditary disease appears to be based on inconclusive data; therefore, it has seemed advisable to attempt an evaluation of the rôle of heredity in this disorder. Erasmus Darwin is said to have referred to the inheritance of acne as early as 1797. In a clinical study on heredity in the etiologic background of acne vulgaris, Stokes and King[1] reviewed the earlier literature on the subject. More recently, Pels,[2] Stryker and Bloom,[3] Stokes and Sternberg,[4] Sutton,[5] and others have listed heredity among the etiologic factors in acne. Sutton flatly states: "Heredity is responsible for predisposition to acne vulgaris. It is a familial disease. The physiologic background necessary for the development of acne is that which is inherited; the changes become manifest with the physical alterations of adolescence." So many writers have included heredity among the causative factors of acne that it appears to be accepted today in many quarters as an established fact.

There are certain methods applicable to the study of the transmission of human characteristics. One of these is the detection of the same disease in monozygotic twins. As is well known, twins may be of several varieties: monozygotic, derived from the same fertilized egg, hence presumably with the same hereditary characters; and dizygotic, derived from two different eggs, and hence with somewhat different hereditary potentialities. Utilizing this method of study, Siemens[6] found that 36 pairs of one-egg twins with acne or allied affections showed remarkable conformity or, at the most, relatively insignificant differences; whereas, only 4 pairs of two-egg twins were concordant out of 12 pairs studied. He stated the belief that the hereditary factors are probably multiple.

While such a study is suggestive, it cannot be considered conclusive, for, as Macklin[7] has pointed out, if the trait under investigation is one so common that it is met with in practically

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From the Department of Dermatology, Graduate School of Medicine, University of Pennsylvania.

all members of the population, such a study of twins can be of little assistance. It can neither prove nor disprove the hereditary nature of the condition; it merely ceases to be a method applicable to the problem.

On the contrary, Pusey and Rattner[8] have recorded the occurrence of acne in only one of identical twins, thereby suggesting factors other than heredity in operation. It is pertinent to remark that, were the medical profession more genetically minded, many similar cases might have been reported. Newman, Freeman, and Holzinger,[9] in their monograph on identical twins reared apart, recorded a pair in which the complexion of one was described as "clearer and a better color" than the other and two pairs in which the skin of both members was sallow and inclined to pimples. Further reports of acne in one or both of identical twins will be helpful in evaluating Siemens' observations.

Apropos of the similar character and distribution of acne in identical twins, the author recalls a number of families in which acne of a like general pattern has occurred in children of the same or opposite sex who were not twins. I have treated acne in persons whose older brothers or sisters had been my patients several years previously for acne practically identical in type of lesion, distribution, response to therapy, and scarring. While this family relationship is not common, it does occur and tends to minimize the importance of concordant acne in monozygotic twins.

Another method of statistical approach to the subject of inheritance is roughly as follows: Collect a group of persons who exhibit the trait whose heredity is under investigation. Ascertain what percentage of their ascendants showed the disease. Collect a similar control group, as near as possible like the first in every respect except one, namely, that they do not have the trait in question. Ascertain the percentage of their ascendants who had the defect. If the two are approximately the same, then the conclusion is drawn that heredity plays no part in the etiology of the condition. The occurrence of a much higher percentage of the defect in the ancestors of those exhibiting the trait may be presumptive evidence of its hereditary nature.

Employing this method of approach, Stokes and King studied 143 private cases of acne vulgaris and 100 normal controls consisting of physicians and nurses between the ages of 18 and 27. They concluded that acne vulgaris was 26 times as frequent in the parents and twice as frequent in the siblings of persons having acne vulgaris as in the corresponding relatives of other persons who never had acne. Stokes and King emphasized that this does not establish acne as a hereditary disorder, but it at least supports strongly the suggestion of a background within the family.

The limitations of this method may be shown by several illustrations. If xeroderma pigmentosum were to be investigated in such a way, the conclusion would be reached that heredity played no part, for the percentage of affected parents in each group would be zero, since about two-thirds of such patients die before the age of 15 years and those who survive rarely marry. If they did, the overwhelming chances are that their children would be normal. Such a conclusion would be erroneous, for other methods lead us to conclude that xeroderma pigmentosum is a recessive hereditary trait. On the other hand, if congenital syphilis were investigated by this statistical means, one might reach the conclusion of years past that this disease is hereditary. In any statistical approach, one must remember that patients with acne are "acne conscious," a fact which colors and distorts statistics based on history alone.

The author has attempted to evaluate the rôle of heredity in acne by the pedigree method. The family histories of 78 patients were investigated with respect to the occurrence of the same disorder in other members of the family. It was soon found that most young people were uncertain as to whether their parents had suffered from acne at any time and wholly ignorant of the medical histories of their aunts, uncles, and grandparents insofar as this disease concerned them. It was then decided to analyze only those pedigrees in which the patient and either or both of the parents could act as informants. This seemed to improve the quality of information somewhat, although disagreement between the informants was common. Forty-two families remained in the group for detailed analysis. An attempt was made to examine as many of the members of these families as possible. It was concluded that, for the most part, only the severe cases had been mentioned in many pedigrees even though such cases were sometimes omitted, for severe scarring was found in some relatives originally listed as not having had acne. Many of the members of these families first recorded in the latter category on direct examination admitted having had a few papules or blackheads earlier in life or stated that they had had "pimples" on their shoulders or chests, parts frequently not visible to my informants.

The conclusion was drawn that since acne is frequently mild and so commonplace, it does not impress itself upon the general public. Pedigrees built upon hearsay evidence gathered by persons not trained to observe accurately are probably unreliable; and even where various members of the family are interviewed and examined, highly conflicting data are secured. Analysis of the pedigrees obtained, even making allowance for conflicting claims, has thrown no light on the possible hereditary mechanism of this disease.

Another method of analysis applicable to this study is the comparison of the incidence of acne in various racial groups under different modes of living. One may assume that the same genetic factors would be present in each instance. If one group showed considerably more acne than the other, nonhereditary causes might be considered predominant, or at least some stimulus, external or internal, is necessary to convert the hereditary possibilities into an objective reality. Several opportunities are available for making such comparisons. Rabinowitch, who spent a summer among the Eskimos, living under native conditions in the Hudson Bay region, saw the surfaces of the bodies of well over 1500 persons. In no instance did he recall a case of acne. On the other hand, a college teacher who spent a number of years in Alaska had the distinct impression that pimples were as frequent among the Eskimos under civilized conditions as in the whites. From information available, it appears that acne is a much less common disorder among native black Africans, Australian aborigines, and Maoris than it is among civilized white people. As the Maoris adopt modern methods of living, the condition occurs more frequently. Acne as seen in the American negro is said to be practically nonexistent among native Africans. Certainly it does not seem reasonable to believe that genetic mutations alone can account for the discrepancy among these groups. Just as the incidence of dental caries increases with the adoption of modern ways of living, so does acne appear to march with civilization.

Any statistical attempt to establish the heredity of acne vulgaris is subject to criticism because of the widespread distribution of the disease. Two recent extensive surveys of the incidence of acne are in the literature. Bloch,[10] in Switzerland, examined 2136 girls aged from 6 to 18 years and 2055 boys aged from 6 to 19 years. He found that acne in its broadest sense, including cases with only a few comedones, occurred in 59.6 per cent of the female and in 68.5 per cent of the male subjects, the average for both sexes being 64 per cent. In Bloch's group only 3.4 per cent of the girls at the age of 17 years and 0.6 per cent of the boys at the age of 18 years were entirely free from acne.

In this country, Hinrichsen and Ivy[11] carried out a similar survey using Bloch's classification of the various grades of the disease. Their material included 872 boys and 1180 girls between the ages of 5 and 22 years. Three groups were represented in their survey: (1) 590 children living in a children's home and varying in age from 5 to 18 years, (2) 1128 high school students, and (3) 334 young women attending a university, varying in age from 16 to 22 years. At the age of 12, only 3.5 per cent of the girls, and at the age of 19, none of the boys were entirely free of the disease.

Bloch stated that it would seem that some comedones are at least physiologic and that "there is not much sense in looking for special pathologic processes in the endocrine system." Perhaps his remarks may be applied with equal wisdom to the heredity of acne. A history of the disease in one or more members of the family was given by 75 per cent of the girls at the children's home and by 57 per cent of the boys in the series of Hinrichsen and Ivy. These authors stated that "in view of the general incidence of the disease, however, such data are of little significance." One must not assume, however, that the universal presence of a disease throughout the population is evidence that the condition is not hereditary. It merely shows that obtaining proof of its inheritance is a difficult matter. The work of these authors cannot be lightly dismissed, nevertheless, for their patients were examined by men trained to observe carefully. Their findings must be given greater emphasis than reports based upon hearsay evidence alone.

Summary

1. The concordance of acne in one-egg twins as contrasted with its occurrence in two-egg twins constitutes the strongest evidence of a possible hereditary factor in acne vulgaris thus far presented. A case report of acne in one of identical twins, the occurrence of a definite "pattern" for acne among non-twins in certain families, and the limitations of the study of twinning in diseases affecting practically all members of the population definitely restrict the conclusions that may be drawn from this method of approach.

2. Acne is much less frequent among primitive peoples, but increases among the same racial and genetic stock as the ways of civilization are adopted.

3. Attempts to establish the hereditary nature of acne by statistical means based on hearsay

evidence are valueless in face of the almost universal discovery of the disease in young adults when examined by trained observers. A "negative family history for acne" is very apt to mean poor observation since so few reach adult life without at least some lesions of the disease.

4. In the light of present knowledge, it appears that the rôle of heredity in acne vulgaris is negligible.

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NOTE: The discussion of the papers by Drs. Rickloff, Butterworth, and Twining follows Dr. Twining's paper.

Roentgen-Ray Treatment of Acne Vulgaris

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A FEW years ago acne vulgaris, with its characteristic papules, pustules, and its usual resulting scar formation, was looked upon and considered by the parents, and not infrequently by the family physician, as a more or less natural phenomenon which would in the course of a few years disappear of its own accord. Very little attention as a rule was given these unfortunate individuals. Today, however, the acne vulgaris patient demands treatment, as well as good cosmetic results. Fortunately, a large percentage can be greatly improved or even cured, and I am of the firm belief that roentgen ray, in the hands of a competent dermatologist, is justifiable and definitely indicated in all types of chronic acne, especially with scar formation. However, the causative factor should be searched for and removed if possible, together with the administration of the indicated internal and external medication.

Several theories as to the action of x-rays in the treatment of acne vulgaris have been advanced. The old theory that x-rays have a bactericidal action has been rather definitely disproved. There are, however, many who still believe that the disease is cured by the inhibitory action of the sebaceous as well as the sweat glands. Still others think that the benefit is derived from an antibody or protective substance formed by the destruction of lymphocytes, which are very susceptible to radiation. And perhaps the newest theory is that the accidental radiation of the thyroid decreases the iodine, which may be responsible for the condition in some cases. However, to date, there is no definitely proved theory.

X-ray alone is never justifiable, although in many cases there will be great improvement or a disappearance of the lesions. Invariably the patient will sooner or later have a recurrence, whereupon demands will be made for more treatment, and we are all aware of the dangers of too much x-ray therapy. As the first danger signs, such as skin irritability or flushing, make their appearance, treatments should be stopped at least temporarily. Later, should dryness or slight wrinkling be noticed, the treatment should be immediately discontinued. Unfortunately, at this stage if the acne is not cured, a few patients, regardless of warning, insist on continued treatment, and when refused by the physician will occasionally go elsewhere. At times they even deny having had previous x-ray therapy, and should the new consultant be caught off guard

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or not recognize the warning signs, a radiodermatitis is sure to develop. Fortunately, these conditions are few and far between.

When should x-ray therapy be used? Certainly it is not recommended in every case of acne vulgaris. I would say that it is indicated in all cases where there are beginning scars or where a case has been treated for a reasonable length of time constitutionally and locally without improvement, especially where there is an oily or seborrheic type of skin. It should not be used in the acute cases or in the very young, that is, before puberty. Neither should it be used in the so-called menstrual acne, which almost always subsides between the periods. The comedo, the superficial papular, and the erythematous types should not be treated with roentgen rays until all other methods have failed.

After a thorough examination and the removal of the cause if possible, and x-ray therapy is indicated, should the patient be treated locally? There are many conflicting opinions on this question. I am one who takes the stand that it should be used, but not to the extent of causing irritation. Comedones should be expressed and abscesses incised by the physician, as the patient will often do more harm than good attempting these procedures. Thorough cleansing with ordinary soap and water 2 to 3 times daily and the avoidance of cosmetic face powders is advisable, substituting instead a mild antiseptic powder. The daily application of a weak lotio alba, zinc sulfur paste, or sulfur and resorcin lotion is recommended. Ultraviolet, however, is contraindicated.

There are many physicians even today who still condemn this form of therapy, but in all probability they have failed either in their technic, their selection of cases, or to recognize and treat at the same time the etiologic factors. On the other hand, there are many of us who consider good x-ray equipment an absolute essential in the practice of dermatology, and especially in acne, for we are getting good results. Not only is the decreased time element an important factor but the recurrences with combined treatment are far less frequent than with any other procedure. The average time needed to cure a case of acne without the x-rays is from 6 months to 2 years, and by the combined treatment the result is usually accomplished within 3 months.

I do not believe that every practitioner equipped with an x-ray machine is qualified to treat these cases unless he has a thorough knowledge of dermatology. The indiscriminate use of this method cannot be too severely condemned or criticized. Two or preferably 3 times a year the machine in use should be checked by both ionization and biologic methods of standardization in order to administer the proper dosage, for it is a well-known fact that any machine may vary in its output from time to time.

In my experience, the air-cooled tube is far superior in this work to any other type, and although not absolutely essential, shockproofing of the apparatus adds to the safety factor. Otherwise, any standard type of machine is simply a question of choice.

In the treatment of these cases my best results have been obtained by using unfiltered radiation, one-quarter erythema dose, or 75 roentgens to the affected areas, once weekly for a period of 3 or, possibly in a few selected cases, 4 months, depending on the skin tolerance and the results obtained. Usually this amount of treatment is not necessary and there is no advantage in continuing the treatment after the lesions disappear. When the face is involved, 2 areas are treated, first one side of the face, with the anode at right angles to the outer end of the zygoma shielding the eyes, eyebrows, scalp, ears, lips, and chest, including the thyroid. If the chin especially is involved, usually 3 exposures are made, decreasing the dosage to one-eighth erythema dose over each exposure, two being the same as described above, and the third centered over the chin. When the chest alone is involved, usually one exposure is all that is necessary, but if the anterior surfaces of the arms and shoulders are involved, then 2 exposures are necessary, placing the arms on a level with the chest and centering the anode midway between the anterior axillary lines and the nipples, allowing overlapping of the sternum, and of course, shielding the face. The same technic is used for the back, but if the extension is widespread, 3 areas should be treated, having the centers of exposure at a distance of at least 14 inches apart, and shielding is not necessary except for the scalp. Improvement is usually noted after the fifth or sixth treatment and is manifested by a decrease in the amount of secretions by the sebaceous and sweat glands, and by a decrease in the formation of new lesions. If these symptoms are not noted at this stage of the treatment, then a more minute search should be made for the primary cause.

After treatment is started, the patient's affected skin should be carefully examined at each visit for any signs of irritability, such as erythema, dryness, or very fine wrinkling, especially around the mouth, because occasionally an individual will be encountered who will manifest these symptoms early, and the advisability of discontinuing or proceeding with a reduced dosage depends on the patient's response after a few weeks' rest. Very often, after a few treatments, a patient may develop a brownish discoloration or tanning together with freckles. Of course, this is undesirable from a cosmetic viewpoint, but it is no indication to discontinue the treatment, for as a rule it subsides in a few weeks or months after the cessation of therapy. Unfortunately, there are a certain number of patients who claim in all good faith that they have been scarred by x-ray treatment. As a precautionary measure all patients should be informed before treatment that their disease is bound to leave scars. Very often before treatment is started, these scars and those forming will be so overshadowed by the inflammatory process that they will not be noticed by the patient. Roentgen therapy is used to prevent additional scarring rather than to produce scars.

It has also been claimed that roentgen therapy produces an abundance or overgrowth of hairs. Were this true, the roentgenologist would be kept busy treating alopecia or baldness. However, there has been some foundation for this claim, but it is thought that local therapy, such as ultraviolet, sulfur, etc., has caused stimulation to the already present natural hairs. Very often this condition is noticed where there has been no x-ray used, and it may be that the disease itself is responsible.

There is no question but that therapy darkens the fine downy hair in females whose skin is tanned or pigmented by roentgen therapy, thereby increasing the noticeability of their previously normal or superfluous hair growth.

Regardless of any methods used in the treatment of this disease, there are bound to be recurrences, but I believe they are fewer with the combined technic, that is, systemic, local, and x-ray treatment, than with any one method alone. How then may we handle these cases? Are we justified in repeating roentgen therapy if a full course of 3 to 4 months' treatment has previously been given? To this question I would say no, or at least not until all other methods fail. In all probability some causative factor has been overlooked. However, if the acne persists, x-ray treatment may be renewed, provided a year has elapsed since the last treatment, if there are no signs of dryness or wrinkling of the skin, especially around the chin or mouth, and if one has the approval of a consultant. However, if there is no improvement after a few treatments have been given, the therapy should be stopped. If these precautions are disregarded, very unfavorable sequelae may develop, such as excessive dryness, wrinkling, atrophy, telangiectasia, keratoses, ulceration, and lastly, squamous-celled carcinoma.

Summary

It is the author's opinion that x-ray, in conjunction with indicated constitutional and local therapy, is the preferred method of treatment in chronic acne vulgaris. With proper technic the cure is much faster, the cosmetic results are better, and the recurrences less frequent. There should be no injurious effects if a careful examination of the skin is made before each treatment, and if the proper dosage is given at weekly intervals with regularly standardized equipment.

ABSTRACT OF DISCUSSION

CARROLL WRIGHT (Philadelphia): There is no doubt but that there are still many families who think that acne is something their children must go through, and unfortunately, many times the family physician takes the same attitude. I feel that it would be a very good idea if more papers were written for the lay public calling attention to what modern therapy can do for this disease. A great deal has already been done to disprove some of the old superstitions or beliefs about acne, but even more can be accomplished.

Anyone who sees much acne—and of course dermatologists see more than anyone else—realizes the great amount of mental suffering caused by this condition. Young people who have it sometimes feel that they are social outcasts. One patient told me that unless she could be cured she was going to commit suicide. So we cannot give too much attention to this condition.

Dr. Rickloff showed some excellent photographs. We all recognized some of the types of cases that we see in our offices, particularly the deep cystic type in which, no matter what we do, the patient is bound to be scarred.

The question of heredity in acne is very frequently raised by the patient or the family. Mothers often say they should never have married because their daughters have acne like they themselves had. We do see acne running in families, but evidently Dr. Butterworth feels that heredity is not very important.

Of course, the subject that we are vitally interested in is roentgen therapy, which Dr. Twining has covered very thoroughly. He mentioned the fact that in many cases there is a tendency to fine wrinkling of the skin and at times the formation of wrinkling or freckles following x-ray therapy. In most of our cases, particularly the older children, we do use the x-ray, although much can yet be done to improve our methods. Four or five years ago I found in my office a thin aluminum filter (three-tenths of a millimeter) and it occurred to me that by pasting over this a piece of chamois skin and using it over some of the deeper types of acne I might improve my results, because after all some of these lesions are pretty deep. Much to my surprise it worked out much as I thought it might. Practically none of the cases in which that filter was used showed any wrinkling, particularly where they had previous x-ray treatment. Without increasing the time and by reducing the amount from 80 to around 50 r units, I found that I could give the treatment over a long period of time with practically no untoward effect such as wrinkling or pigmentation.

One thing we have to guard against is a belief that is in the minds of many people, namely, that x-ray therapy increases scarring. That has been very definitely disproved. In a symposium published in the *Journal of Investigative Dermatology* it was shown that the x-ray tends to lessen scarring. The worst scarring results in those cases that are untreated. Patients do not see the scars when they have a bad case of acne and they think the x-ray causes the scars that remain when the pustules have disappeared. Early in the last century, before x-ray was heard of, acne was considered a pock-making disease, and was referred to as "stone-pox." It is certainly a disease to which we should give a great deal of attention.

GET ADDITIONAL DOCTORS IF NEEDED

It is imperative that local boards have a reserve of I-A men sufficient to fill current calls and meet replacements. If a bottleneck is developing because you cannot get registrants physically examined fast enough, please take the following steps:

Get in touch with your county medical society and, in co-operation with the originally appointed examining physician for your local board, obtain the society's endorsement of the additional physicians you require.

Send the names of these men to headquarters with the statement that they have been recommended by the county medical society and request their appointment.—*Pennsylvania Selective Service Intelligencer.*

NEW EDITION OF THE DIRECTORY OF MEDICAL SPECIALISTS

Specialists eligible for listing in the forthcoming second edition of the Directory of Medical Specialists are urged to fill in and return promptly the questionnaires for biographic data recently mailed out by the publication office.

This directory is the official publication of the Advisory Board for Medical Specialties, issued every 2 years, and listings are limited to those formally certified by any of the 15 American boards examining in the medical specialties. There is no charge for such listings.

The second edition is now being prepared, and will be ready for distribution in February, 1942, with biographic, geographic, and alphabetic listings of all diplomates certified to Jan. 1, 1942. It will include approximately 18,000 names.

The directing editor is Paul Titus, M.D., 1015 Highland Building, Pittsburgh, Pa., and the secretaries of the 15 American boards constitute the editorial board.

REHABILITATION HERE AND NOW

While physicians are quick to point out that most of the physical defects being uncovered by the current physical examinations of registrants under the National Selective Service were not, through even the most expert medical care, susceptible to reconstruction to the point required for men selected for the U. S. Army and Navy, they are equally quick to recognize the value of making opportunity in the present public interest to plan for prompt and appropriate rehabilitation, physical and mental rehabilitation to be accomplished as quickly and as far as possible under tenets of the American Medical Association:

1. "The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

2. "In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established."

Representative officers and committees of county medical societies throughout Pennsylvania, working with the hundreds of examining physicians associated with registration boards for selectees, will also be quick to point out the best facilities, wherever they may be located, for the rehabilitation of those rejected for physical reasons in order that each may become fit to adequately take his place in community life. Local physicians will also be alert to advise the increase, where necessary, of local facilities for the prevention, as far as possible, of physical and mental handicaps now developing through ignorance and neglect.—*Pittsburgh Medical Bulletin.*

OBTAINS RELIEF FROM SINUS INFECTIONS

A nasal spray of the sodium salt of sulfathiazole was found to bring greater relief from the symptoms of chronic sinus infection than any other preparation he has used, Frederick Myles Turnbull, M.D., Los Angeles, reports in *The Journal of the American Medical Association* for Apr. 26.

He used the sulfathiazole spray for 47 patients with chronic sinusitis and 40 of them reported definite improvement and relief of symptoms. On 4 of the remaining patients the author has no report; of the 3 reporting no improvement, 2 had hay fever and 1 was fighting an influenza infection and at the present time, he says, is showing improvement.

Of the 40 improved patients, 20 showed an increase in drainage, with definite relief of symptoms (congestion, fullness, heaviness, and pressure headaches) and opening of the nasal passages. Twenty reported no increase in discharge, but nevertheless there was relief of symptoms. None of the 47 complained of sneezing as an aftermath of the treatment. There were no toxic symptoms whatever, even when the solution had been used as a nasal spray over a period of 5 months.

Dr. Turnbull believes that the results obtained in chronic sinusitis "seem to justify further investigation and would also suggest investigation in other involvements due to staphylococcic infections on account of the solubility of the sodium salt of sulfathiazole."

THE PENNSYLVANIA MEDICAL JOURNAL

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FRANK CLINCH HAMMOND, M.D.

It is our sad duty to record on the pages of this JOURNAL, which was so close to his heart, that Dr. Frank Clinch Hammond passed from among us on Apr. 12, 1941.

Dr. Hammond's career in medicine was distinguished. In 1940 he concluded 15 years' service as editor of THE PENNSYLVANIA MEDICAL JOURNAL, and at the time of his death he was editor emeritus of the JOURNAL and honorary dean of the School of Medicine of Temple University.

Frank Clinch Hammond, M.D.

Dr. Hammond was born in Augusta, Ga., Mar. 7, 1875, the son of Thomas and Mary Ann (Harris) Hammond. He attended the Boys' High School of Philadelphia and was graduated from Jefferson Medical College in 1895.

After serving a year's internship at St. Joseph's Hospital in Philadelphia, Dr. Hammond became instructor of gynecology at Jefferson Medical College in 1896, remaining in that position until 1903.

On Nov. 10, 1903, he resigned from the staff at Jefferson in order to accept a position at the School of Medicine of Temple University. Dr. Hammond's fine work at Temple won for him recognition as professor of gynecology and dean of the School of Medicine. He continued as dean until 1929 and was the leading spirit in the rapid development of the school during that period.

In 1929 Dr. Hammond was awarded the honorary degree of Doctor of Science by Temple University and during the same year was named honorary dean of the School of Medicine and chairman of the medical faculty. Until his resignation in 1940, he was professor of gynecology at the university.

Dr. Hammond was gynecologist at the Temple University Hospital and the Philadelphia Hospital for Contagious Diseases, obstetrician and gynecologist at the Philadelphia General Hospital, senior attending obstetrician and gynecologist at the Jewish Hospital, and consulting gynecologist at the following hospitals: Newcombe, Vineland, N. J.; Delaware County, Drexel Hill, Pa.; and Riverview, Norristown, Pa.

In 1918 Dr. Hammond was president of the Philadelphia County Medical Society and served as medical aide to Governor Martin G. Brumbaugh. He was elected trustee and councilor for the first district of The Medical Society of the State of Pennsylvania in 1919. A year later he was appointed to membership on the Publication Committee of the Board of Trustees, being elevated to the chairmanship in 1924 and continuing in that position until 1929, when his two terms as trustee and councilor were completed and he was no longer eligible for re-election. He served as editor of THE PENNSYLVANIA MEDICAL JOURNAL from

June, 1925, to January, 1941, at which time he was made editor emeritus.

Besides his membership in his county and state medical societies, Dr. Hammond was a Fellow of both the American Medical Association and the American College of Surgeons. He was a member and former president of the Philadelphia Clinical Association, the Philadelphia Medical Club, and the Obstetrical Society of Philadelphia. Dr. Hammond was also a thirty-second degree Mason and a member of the Union League.

In 1926 Dr. Hammond was married to Mrs. Theresa Audibert McTurk, who, with her son and daughter, survives.

The long list of positions held by Dr. Hammond is evidence of his contribution to scientific medicine and medical education. The offices to which he was elected in medical organizations show the esteem in which his colleagues held him. The issues of THE PENNSYLVANIA MEDICAL JOURNAL for the past 15 years constitute a monument to his leadership in the field of journalism. Only the best in medical science and education, in medical ethics, and in medical journalism gained his support.

The high ideals for which Dr. Hammond stood are known to everybody who knew him; but only those who knew him more intimately realize the breadth of his kindness, the depth of his sincerity, and the genuine quality of his character. And there is not one among us who did not gain something very precious from our association with him.

Words—even the best of words—are not quite adequate to express what Dr. Hammond's friends feel in their hearts today. Ever since we first heard that he had passed from among us, our thoughts have turned again and again to an expression which characterizes his life with direct and compelling accuracy, for Dr. Hammond was one of the very few among men about whom we can say with complete honesty—

None knew him but to love him,
None named him but to praise.

L. H. P.

INDUSTRIAL MEDICINE—INDUSTRIAL PHYSICIANS

The State of Pennsylvania was host in May at Pittsburgh to the American Association of Industrial Physicians and Surgeons and the American Industrial Hygiene Association. The former was holding its twenty-sixth annual meeting and the latter its second. An impressive joint program lasting 4½ days was presented and an imposing and interesting scientific exhibit was on display. There was an effective combination in the programs of the achievements of the surgeon, the thoughts of the internist and psychiatrist, the contributions of state and federal health officers, the studies of the physicist, chemist, and research worker, and the useful deductions of the industrial hygienist. Even a casual reading of the program* would startle the average physician by the surprising number of chemical words apt to be entirely strange to him and a new approach to the study of bacteriology. He would be impressed by the evidence of scientific ingenuity in research revealed in the wording of the titles of some of the papers and would discover an amazing variety of instruments and technics in examination of which he had never dreamed. In short, he would probably be somewhat shocked to discover that industrial medicine had come of age, in fact was in a vigorous middle life—an achievement marking progress of which he was either only vaguely aware or, more likely, entirely ignorant.

The pride of the parent organization of medicine in the achievements of this stalwart son, industrial medicine, should justly be great. And with equal justice it must be tinged, at least a little, with regret that its early attitude was hardly that of a fond and helpful parent. A regrettable reluctance to accept the idea that doctors might be paid in salaries instead of fees was partly responsible for this early lack of warmth. There may have been also a then not unjustified fear of the control of even a fragment of medical practice by laymen in the person of industrialists who held the purse strings and could thus control the policies of medical departments. Happily, time and accepted practice have dignified the then new economic idea

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* Published complete in April issue of THE PENNSYLVANIA MEDICAL JOURNAL.

COMPLETE NARCOTIC REGISTRATION PROMPTLY

Physicians must register annually under the Harrison Narcotic Act on or before July 1, not July 5 or 15, 1941, but preferably June 20 or 27, 1941.

Many Pennsylvania physicians after July 1, 1940, were called upon to pay not only the 25 per cent penalty but also a fine of five or more dollars and to sign an article of compromise in avoidance of criminal prosecution.

The law is clear, the penalty inevitable! Why not forward your dollar to the Internal Revenue Collector of your district before July 1, 1941?

and the fears have been found to be groundless. There seems to be no visible difference between the honest concern of the industrial physician for the workmen under his care and that of the ordinary doctor for his private patients. It is very likely the average industrialist has greater pleasure in the health and well-being of his employees than he has in the fact that less sickness and less accidental injury mean increased man hours of work. Indeed, many statements heard gave expression to this very thought.

There was evident in these meetings a sincere desire to make the maximum contribution to national defense. In this endeavor the industrial physician and surgeon has a rôle second to that of no other. In a very special way his work helps to keep industrial production at its most efficient level. He brings us new records of achievement in the early detection and proper introduction to treatment of tuberculosis and syphilis in large groups of relatively young adults. He is a pioneer in medicine in the discovery of the toxic effects on the human organism of new chemicals, solvents, plastics, and other materials and is even now writing new chapters in medical discovery which must shortly be included in medical textbooks. He has produced a vast highly specialized medical literature. He has recently won and will firmly hold a proper place on the faculties of medical schools. He has taken into a pioneer field of practice the ancient traditions of medicine, which impel the physician to serve the well-being of his patient before his own. In hundreds of industrial medical departments he has succeeded in establishing this theory of conduct as the basic policy of the department, and this is an achievement of the first magnitude.

When physicians pause to honor the accomplishments of their great colleagues in medicine, surgery, pathology, bacteriology, and the physical and chemical sciences, they will before long think of the contributions of the industrial surgeons and physicians and accord them their due measure of unstinted praise. A. H. C.

A GENERATION TO RECOUP

It was Carlyle who said that a generation must pass before sufficient perspective can be had to write a sound history of any period; but we do not have at hand an equally trite phrase to express alterations, if any, on history's final judgment of periods influenced by current methods of world-wide communication. Will designing propaganda nowadays spread by means of the "movies" and the radio hasten or delay the desired crystallization of thought which in Carlyle's nineteenth century required a generation?

Up until a month ago there was good reason to fear that America in the throes of selecting the personnel of its suddenly and rapidly expanding defense or war forces was about to discard lessons to be learned at hand from current war experiences developed or developing in Europe, Africa, and Asia.

Editorial fears were aroused because, stated briefly, the National Selective Service continued to discuss occupational deferment of students, expressing no doubt as to the need for immediate deferment in "the draft" of electrical, mechanical, and other engineering students, while medical students were classified as the least essential in a category of students which included those in geology and biology. Would the registration authorities at Washington never realize the necessity for maintaining without interruption the graduation of the most essential students of all; namely, the wisely selected and adequately trained doctors of medicine?

At about the same time we read in the 1940 Review by the Rockefeller Foundation impressive comments on "the current decadence or disappearance, or worse, the perversion of European institutions of learning which had so recently given high promise in public health and in medicine." The outstandingly significant sentence in this comment reads briefly and pointedly as follows: "A break in the chain of medical teaching in any country spells disaster for the next generation." Not for a decade, 10 years, please note, but for a generation, 30 years.

In England medical students were not subject to the draft, but only one teaching hospital in all of London has escaped bombing. In a belated attempt to correct this situation 25 leading medical schools in Canada and the United States have indicated their cordial willingness to accept British medical students to complete their training prior to returning home.

As if to add force to the arguments applicable to those who in the face of European experience and in line with the best of American university policies fail to support the maintenance of an unbroken production line for medical graduates, there appeared in the public press early in May a dispatch from Australia to the effect that the Minister for the Army in that country had announced a recommendation that Australian universities shorten their medical courses. This procedure in the face of what had happened to medical schools in Germany and Australia and

Italy may have served to convince some of those in authority in this country that under the stress of war or national defense in any nation the shortage of physicians soon becomes serious and the methods of correction destructive. Already in Australia it has been brought out that there is now only one physician for every 3500 persons in that country and that it is impossible to send more doctors than have already been sent from Australia to Britain and to India.

Almost simultaneously, as these facts became news, the National Selective Service announced to all Selective Service registration boards that included in "8 specialized professional fields for which student deferments are urged because their supply of manpower for national defense is now dangerously low" was that of medicine. Concerning these professions it was said that "the Bureau of Labor Statistics studies have revealed a dangerously low level of manpower, and all representatives of the Selective Service System should give immediate attention to the problem of preventing any unnecessary increase of these shortages."

Thus, it is to be hoped that though the people of the United States may not be able during the next few years to continue to have available the services of one physician for approximately every 1000 citizens, the prospects are more promising that there will not soon come any considerable reduction in the present yearly supply of newly graduated medical students (5163), which increment will unfortunately be offset by a yearly average of 3500 deaths from natural causes among the physicians of the United States.

REPORT OF THE SECOND MEETING OF THE PENNSYLVANIA STATE NUTRITION COUNCIL

Penn-Harris Hotel, Harrisburg, Pa.
Apr. 18, 1941

The meeting opened with the showing of a new technical sound film entitled "The Proof of the Pudding." This film, produced jointly by the United States Public Health Service and the Metropolitan Life Insurance Company, emphasizes the importance of the right choice of foods and is available free of charge for use as a "short" in any motion picture theatre in Pennsylvania. Applications should be made to the Metropolitan Life Insurance Company, New York City.

Miss Laura W. Drummond, chairman of the council, reported that the membership of the council represented approximately 326,000 people including such representative groups as 10,000 physicians, 3600 dentists, 17,500 nurses, 500 dietitians, 1800 home economics teachers, 3000 health and physical education teachers, and about 289,000 lay individuals.

Anna dePlanter Bowes, representing the Committee for the Protection and Promotion of the Nutrition of Children and Families in Pennsylvania, reported:

1. Seven journals or bulletins sent regularly to the members of the Pennsylvania State Medical, Dental, and Dietetic Societies published complete reports of the first Nutrition Council meeting.
2. Copies of selected books and pamphlets on nutrition distributed at the first meeting of the council, have been made available by printing the list in state journals and by having copies distributed by local groups.
3. A study of the adequacy of the diets used by the Department of Public Assistance as the basis for determining family food allowances has been made by Pennsylvania State College and Indiana State Teachers College Nutrition Departments.
4. Preliminary reports have been received on an adequate diet at moderate cost.
5. Eight nutrition institutes reaching the public health personnel in 22 counties have been scheduled from Feb. 13 to May 1.
6. Five new food value charts (in the form of slides and posters), representing the latest data on minerals and vitamins in green leafy vegetables, have been prepared by the Division of Nutrition of the Pennsylvania Department of Health for use all over the state. Food exhibits emphasizing the most important low cost sources of minerals and vitamins have also been developed by the department. (Some of these were shown at the meeting.)
7. The State Federation of Women's Clubs has announced that each affiliated group will devote one meeting to nutrition during the coming year.

Herbert T. Kelly, M.D., chairman of the Committee on Nutrition of The Medical Society of the State of Pennsylvania, outlined the function and work of his committee as follows: (1) To bring the newer knowledge of nutrition including the prevention, early recognition, and medical management of nutritional deficiency to the medical profession through a well-organized program at state and county society meetings. (2) To establish a Speaker's Bureau on Medical Nutrition. (3) To develop a motion picture on the Modern Science of Nutrition.

Dr. Pauline Sanders, representing the National Defense Committee of the Pennsylvania State Teachers Association, reported on helping families use surplus commodities. Booklets of recipes using various commodities were compiled from all home economics schools in the state. Dr. Sanders is also conducting a survey to obtain trained home economics people for speakers and leaders of discussion groups.

Mr. H. C. Fetteroff, chief of the Division of Agricultural Education, Pennsylvania Department of Public Instruction, outlined the work of schools in the vocational agriculture classes. About 15,000 farm boys are enrolled in these classes. Vegetable gardening is being given a prominent place in the curriculum and about 3500 boys had vegetable garden projects last year, raising about 750 acres of vegetables. Improvement in quality, production, and marketing are being stressed.

Miss Margaret Brown, chairman of the Committee on Leadership in Community Nutrition Programs, reported the methods by which home economics and county agricultural extension workers have developed community programs. Early spring meetings are held to plan gardens for supplying the needs of families, followed by education in the planting, care, storage, and preservation of the products.

Miss Helen C. Goodspeed, director of home economics, Philadelphia public schools, and Miss Irene McDermott, senior supervisor of home economics of the Pittsburgh public schools, discussed the various methods used in their schools in improving the health of school children and their families.

Mr. C. A. Hile, state supervisor of commodity distribution, outlined the latest developments of the Food Stamp Plan and reported on the recent meetings in the various sections of the state to improve school lunches.

Miss Phyllis K. Sprague, chairman of the Committee on the Utilization of Food Resources, discussed the problems of starting school lunch programs in 4 one-room rural schools in the central part of the state and the general progress made by her committee.

Dr. Pauline Beery Mack reported on the progress in human nutrition studies. She referred especially to the records of 7000 children in Lycoming County and to the new studies to be made with children in Philadelphia. She stressed the fact that the school lunch in low economic groups must often have more than one-third of the day's food requirements due to the poor quality of the meals received in the home.

"High Lights in Nutrition Throughout the Nation" was the subject of the paper presented by Dr. Helen S. Mitchell, director of nutrition, Federal Security Agency, Washington, D. C. The points she emphasized were:

1. The press today recognizes nutrition as news worthy of front page value.
2. People, especially in the East, seem to be very alert to nutritional needs.
3. Local nutrition programs should be well co-ordinated with the State Council's program.
4. Home production of vegetables by rural and small town families should be encouraged. The increased use of green vegetables is highly desirable. Home surpluses must be considered in view of extra food demands made by England for the coming year.
5. The present status of enriched flour and bread.
6. Tentative dietary standards for various ages as developed by the leading workers in this country.
7. Need for correct information on nutrition. Food fads need steering rather than condemning. Consultation services on food selection may be developed to good advantage.
8. Known nutrition facts must be applied to individual homes. Much food value is lost in marketing and home cooking.

At the beginning of the afternoon session, "Health and Happiness," a new motion picture in technicolor explaining what can be accomplished through good nutrition, was shown. This film is available through the Extension Service, United States Department of Agriculture, Washington, D. C. A preliminary showing of a motion picture being developed by Dr. Pauline Beery Mack on "Nutrition Studies with School Children" was also shown. This film will be available for use after September, 1941.

Following the showing of these 2 films, committee meetings were held to work out the details desirable to further the council's program. The committees then reported to the entire council. It was recommended by the committees that an additional committee be created to formulate simple nutrition outlines for study groups. This committee is to have suggestions available for interested groups by fall. It was further recommended by these committees that the program of the Nutrition Council should continue to have publicity through state publications of all types and at state and county meetings of professional and lay organizations; that more books on nutrition with popular appeal be made available through libraries; that men's service organizations be represented on the Nutrition Council; and that it would be desirable to defer organizing county nutrition programs until the State Nutrition Council's program is further developed.

The Committee on Home Gardens and Food Production stressed the importance of publicizing throughout the state the co-operative seed purchase program, the new Handbook on Farm Management being prepared under the chairmanship of Dr. McCord, and the co-operative community canning projects. This committee further recommended that everyone should know the details about the Farm Security seed packets and home garden programs. They also pointed out that there are 300 teachers of agriculture in the state who are available for individual consultation on home gardens.

SEVENTH COUNCILOR DISTRICT MEETING

The annual Seventh Councilor District meeting was held at the Lycoming Hotel, Williamsport, on May 9. The objective of a larger attendance than previously was attained with approximately 145 present and all component county societies represented, meaning that those from Elk and Potter counties traveled over 100 miles one way to attend. There was also in attendance Dr. Joseph S. Lawrence, representative of the New York State Medical Society, located at Albany, N. Y.

The scientific meeting started at about 10 a. m., being addressed by Dr. David E. Hemington, Uniontown, on the subject of "Industrial Medicine in the Small Industry," and by Dr. Walter C. Alvarez of the Mayo Clinic, Rochester, Minn., on "Puzzling Types of Abdominal Pain." Both of these presentations were well received and favorably commented upon.

The luncheon was very acceptable together with the associated program of entertainment of an electric organ, a Scottish bagpiper, and a soprano soloist. The postprandial program consisted of the usual 2-minute reports from the county censors, the giving of the 50-year awards to Drs. Oliver H. Glover, Union County, R. Bruce Tule, Lycoming County, and Lewis E. Wolfe, Union County, by our president, Dr. Francis F. Borzell, followed by his formal address on the subject of "Medical Preparedness." An address by President-elect Lewis T. Buckman and one by Secretary Walter F. Donaldson followed.

Mrs. John L. Mansuy, auxiliary district councilor, introduced the following representatives of the Woman's Auxiliary in attendance: Mrs. Charles C. Crouse, Greensburg, president-elect of the State Auxiliary, Mrs. David W. Thomas, Lock Haven, treasurer of A. M. A. Woman's Auxiliary, Mrs. John R. Davies, treasurer of the State Auxiliary, and Mrs. Walter F. Donaldson and Mrs. Joseph C. Doane, past presidents of the State Auxiliary.

The afternoon program was concluded with a very practical and entertaining talk by Dr. Alvarez, which was equally interesting to both physicians and their wives, on the subject of "Why Women Get Nervous."

This concluded the third joint meeting of the Seventh Councilor District and the woman's auxiliaries of the district, which has apparently proven very popular and will probably continue to be the custom in the immediate future.

Deaths from Selected Causes in Pennsylvania

February, 1941

County	All Causes, Excluding Stillbirths	Still-births	Infant Deaths	Maternal Deaths	Cancer	Cerebral Hemor-rhage	Heart Disease	Nephritis	Pneu-monia	Tuber-culosis
Adams	40	0	1	0	5	2	16	5	0	1
Allegheny *	1316	43	74	4	123	107	363	119	94	56
Armstrong	67	4	8	0	4	4	27	5	4	0
Beaver	138	6	14	0	8	11	36	10	17	1
Bedford	32	0	3	0	5	3	8	3	1	1
Berks *	269	7	8	0	25	26	92	20	14	11
Blair	162	8	9	2	7	7	57	19	9	2
Bradford	74	4	1	1	8	5	24	4	5	0
Bucks	90	4	3	2	13	7	28	15	3	3
Butler	79	2	7	0	8	6	26	5	7	0
Cambria *	183	8	30	0	12	11	45	16	10	7
Cameron	3	1	0	0	0	0	0	1	0	0
Carbon	44	2	1	0	4	5	16	4	1	2
Centre	65	1	6	0	6	4	27	5	1	3
Chester *	127	3	8	0	14	13	33	11	7	2
Clarion	36	0	3	0	3	8	7	1	1	0
Clearfield	87	5	5	0	7	8	24	3	2	2
Clinton	31	0	1	0	2	2	9	3	2	1
Columbia	40	1	4	0	2	4	17	6	0	0
Crawford	81	4	9	0	3	14	29	6	2	2
Cumberland	53	7	2	1	7	4	16	8	1	2
Dauphin *	184	4	15	0	13	17	60	25	13	3
Delaware	241	6	12	0	25	20	89	16	20	7
Elk	34	4	2	0	5	1	10	3	0	0
Erie *	181	5	9	0	20	19	45	12	6	6
Fayette	181	9	23	1	11	21	62	13	10	5
Forest	3	1	1	0	1	1	0	0	0	0
Franklin *	67	4	4	1	6	3	21	10	5	2
Fulton	8	0	0	0	1	0	4	1	1	0
Greene	27	3	0	0	4	1	5	7	1	2
Huntingdon	49	2	3	2	2	2	22	4	1	1
Indiana	51	4	7	0	2	5	15	6	3	0
Jefferson	53	3	5	0	4	6	13	6	2	2
Juniata	20	1	2	0	1	1	8	1	1	1
Lackawanna	303	8	19	0	30	25	108	22	15	12
Lancaster	223	15	14	0	17	20	78	15	14	6
Lawrence	101	3	5	1	10	8	26	3	5	1
Lebanon	67	1	5	0	5	4	25	10	4	1
Lehigh *	164	6	18	1	19	8	56	12	9	5
Luzerne	361	12	16	2	35	25	113	40	16	14
Lycoming	116	6	6	0	14	9	42	5	6	1
McKean	66	5	4	1	5	7	23	6	3	0
Mercer	98	2	5	1	13	7	35	4	7	1
Mifflin	38	2	2	0	2	6	7	6	2	0
Monroe	28	2	2	0	1	4	8	2	1	0
Montgomery *	322	7	23	0	29	32	112	32	12	11
Montour *	36	1	3	0	5	1	9	1	3	1
Northampton	141	1	4	1	21	15	41	5	9	4
Northumberland	130	2	4	0	19	6	40	20	7	6
Perry	24	0	4	0	1	1	5	5	1	0
Philadelphia *	2041	32	85	7	253	137	734	158	139	93
Pike	6	0	0	0	1	1	2	0	0	0
Potter	15	0	0	0	3	1	6	2	0	0
Schuylkill	213	9	12	0	15	13	68	28	10	8
Snyder	8	0	0	0	1	2	2	2	1	0
Somerset	65	5	7	0	5	2	11	13	0	1
Sullivan	8	0	0	0	1	2	3	1	0	0
Susquehanna	31	1	3	0	1	3	14	1	6	2
Tioga	38	3	0	0	1	5	20	3	2	0
Union	22	1	0	0	0	1	12	3	0	1
Venango *	63	2	4	0	13	9	13	6	2	0
Warren *	37	1	1	0	5	4	7	2	2	1
Washington	180	7	14	1	14	24	38	13	14	4
Wayne *	26	2	1	0	1	1	11	3	2	1
Westmoreland *	230	17	19	1	16	23	71	15	11	6
Wyoming	13	0	0	0	0	1	9	1	0	0
York	159	5	8	0	13	16	52	13	11	6
Institutions	226	0	0	0	12	4	52	11	27	57
State Total	9715	314	568	30	942	775	3107	836	585	368

* Exclusive of deaths in state and federal institutions.

TUBERCULOSIS ABSTRACTS

A Review for Physicians

PREPARED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Published through the co-operation of the Pennsylvania Tuberculosis Society and The Medical Society of the State of Pennsylvania

DUST swept under the sofa disturbs no one—until it is discovered; nor does tuberculosis hidden from public view. It is well to be reminded that more than 5 per cent of the people who die of tuberculosis annually in the United States die in mental hospitals. Scant attention has been paid to this sector of the problem, for which reason an article on tuberculosis in mental hospitals commands the attention of health workers, hospital authorities, and physicians. Abstracts of the article follow.

TUBERCULOSIS IN MENTAL HOSPITALS

The Peoria (Ill.) State Hospital, with an average daily census of 2575 patients, has had a tuberculosis division since 1905. X-ray examination of the 56 patients assigned to it showed that 16 per cent had no tuberculosis. Thus, of the resident patients in the hospital at the beginning of the survey, only 47 (1.87 per cent) were known to have tuberculosis.

From the beginning of the survey it was obligatory to take a chest roentgenogram on all patients who were transferred to the infirmaries, irrespective of whether tuberculosis was suspected or not. In the course of the study there were surveyed 2156 patients in residence, 766 newly admitted patients, and 477 employees. Tuberculin tests of these groups (all but about 4 per cent were tested with tuberculin) showed positive reactions in 94.6 per cent of resident patients, 80.6 per cent of receiving-ward patients, and 57.3 per cent of the employees. Parenchymal lesions were revealed by x-ray in 11.2 per cent of resident patients, 7.4 per cent of receiving-ward patients, and 1.6 per cent of employees. The majority of the resident patients and less than one-half of the receiving-ward patients were over 50 years old. The great majority of employees were under 50 years of age.

The percentage of the tuberculous increased with the length of stay of the patients. Of the tuberculous employees, one-half developed the disease after 5 years of service.

About 10 per cent of the tuberculous patients in the receiving wards were committed from tuberculosis sanatoria and about 14 per cent were known to have tuberculosis at the time of admission. The remaining 5.7 per cent were discovered in the course of the survey.

This study bears out what has been found in other studies, namely, that when the physical examination alone is depended upon, tuberculosis is at times diagnosed when it does not exist and overlooked at others even in the terminal stage. One investigator found that 38 per cent of the patients on the tuberculosis wards had no tuberculosis. In another hospital for mental diseases, two undiagnosed cases were found in 50 autopsies.

The different infection rates in the 3 groups can be attributed to the different age groups, and the high percentage of positive reactors among the resident patients chiefly to advanced age. It should be considered also that patients in this study come largely from the low-income group in which infection and morbidity rates are known to be high.

The significant difference in the percentage of tuberculosis among resident (11.2 per cent) and receiving-ward (5.7 per cent) patients indicates that many of the patients develop tuberculosis while they reside in the institution.

"The rationale of spending money on tuberculosis prevention among the psychotics, who already represent a tremendous burden on society, was seriously questioned by some authorities in the course of our study. The fact, however, that 6.9 per cent of our tuberculous patients have already been discharged or paroled by Jan. 1, 1940, shows that some of these patients have an opportunity to spread their disease in their own family and community after they return home. The possibility of the spread of the disease from these patients to the employees also has to be considered seriously. For these reasons the money spent on tuberculosis prevention must be considered as a prudent investment on the part of hospital authorities."

The treatment of the tuberculous psychotic differs in no way from that of the mentally normal, namely, rest. The chief aim of treatment is to convert the sputum and, therefore, collapse therapy is used even if the patient's mental condition seems to be entirely hopeless. Patients under shock therapy deserve special consideration—3.2 per cent of such patients developed tuberculosis either during the course or after the treatment. Patients should be x-rayed immediately before undergoing shock therapy and frequently thereafter.

Should tuberculous psychotics be centralized in one institution? The disadvantage (from the state's standpoint) is that the transportation of patients is costly and that it entails a hardship when the family of a patient has to travel a long distance. Under decentralization, each hospital has to have on its staff at least one physician who is well trained in psychiatry as well as phthisiotherapy. The training of such physicians promises worth-while contributions to the psychiatric as well as to the tuberculosis field.

The author's conclusions are as follows:

1. Tuberculosis is a problem of first order in every mental institution.
2. Patients suffering from tuberculosis are admitted to these institutions in a fairly large percentage without being so diagnosed. In addition to these, a relatively large percentage of patients develop tuberculosis while in residence, again without their disease being recognized.
3. Due to the contagious nature of tuberculosis, mental institutions should develop a definite and systematic tuberculosis control program, employing the tuberculin test and x-ray in diagnosis. These examinations should be conducted on all newly admitted patients immediately after admission and on the resident patients at least once annually.
4. Collapse therapy should be fully utilized in the treatment of the tuberculous psychotic, irrespective of the patient's mental deterioration.
5. Patients selected for shock therapy should be x-rayed before commencing treatment and rerayed at frequent intervals during and after such treatment.
6. Employees coming in close contact with the patients should be x-rayed every 3 months and the tuberculin reactors among the other personnel at least once annually.

Tuberculosis in Mental Hospitals, M. Pollak, M.D., et al., Amer. Rev. of Tuber., March, 1941.

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, *Secretary*
8104 Jenkins Arcade
Pittsburgh, Pa.

CALL TO THE 1941 MEETING

The first meeting of the House of Delegates of The Medical Society of the State of Pennsylvania will be called to order in the Cardinal Room, Hotel William Penn, Pittsburgh, at 3 p. m., on Monday, Oct. 6, 1941. Notice relative to parliamentary requirements for consideration of amendments to the constitution and by-laws was published in this department in the May JOURNAL. A proposed amendment to the constitution is published below, and will be republished, together with the Call to the Meeting, in the July JOURNAL, as well as any additional proposed amendments which may be received by July 1, 1941.

Proposed Amendment to Constitution

An amendment offered by the Luzerne County Medical Society and received by the secretary on May 1, 1941, proposes that the second paragraph of Section 1, Article IV, of the constitution be deleted. This paragraph reads as follows:

Physicians, otherwise qualified, who have taken their first citizenship papers, shall be eligible to membership. This membership is conditional upon the completion of citizenship within 6 years of the granting of first papers. Failure to comply with this provision will automatically terminate membership.

If deleted, "Article IV—Membership" would then read as follows:

The membership of this society shall consist of citizens of the United States, members in good standing in the component county medical societies, and whose annual assessments in this society have been paid. This, however, shall not be construed to exclude from active membership any physician who may occupy a teaching position with any college or university within this state.

COMPLETE NARCOTIC REGISTRATION PROMPTLY

Physicians must register annually under the Harrison Narcotic Act on or before July 1, not July 5 or 15, 1941, but preferably June 20 or 27, 1941.

Many Pennsylvania physicians after July 1, 1940, were called upon to pay not only the 25 per cent penalty but also a fine of five or more dollars and to sign an article of compromise in avoidance of criminal prosecution.

The law is clear, the penalty inevitable! Why not forward your dollar to the Internal Revenue Collector of your district before July 1, 1941?

STIMULATING INTEREST IN GRADUATE EDUCATION

The 1941 Committee on Graduate Education of The Medical Society of the State of Pennsylvania, Charles L. Brown, M.D., 3401 N. Broad Street, Philadelphia, chairman, has made a valiant effort to maintain or, if possible, to extend interest in the ever-present need for expanding facilities designed to bring practitioners of medicine to the sources of graduate medical instruction or to bring the latter to the door of the practitioner unable for any reason to leave home and practice in search of the necessary instruction to keep him abreast of medical progress.

Under date of Mar. 14, 1941, the Committee on Graduate Education distributed the following letter with questionnaire to the president, secretary, and chairman of the scientific program committee of each of our component county medical societies:

Mar. 14, 1941.

DEAR DOCTOR:

The Committee on Graduate Education of The Medical Society of the State of Pennsylvania has met to consider the ways and means of providing the members of the society with graduate educational activities for the coming year. After careful consideration it has been decided to offer again the Seminar Plan in the same form in which it has been available heretofore, which is as follows:

Each county medical society to initiate the organization of a class and communicate with Chairman Charles L. Brown, 3401 N. Broad St., Philadelphia. Those who register for same are to decide on the most desirable subjects for study and choose the teachers from lists to be provided by the State Society's Committee on Graduate Education.

County societies deciding to accept the plan are advised to organize a Registration and Organization Committee, whose duty it would be to enlist and organize a class; appoint a dinner and reception committee to arrange for the reception of the visiting teacher and arrange for the lunch or dinner for the class and teacher; and finally, a finance committee to collect the fees and pay the expenses.

The charge for the 6 seminars is to be $10 for each registrant, this to include lunch or dinner and the visiting teacher is to receive an honorarium of $25 and railroad fare. The State Society through the Board of Trustees is to absorb unavoidable deficits.

The State Society committee strongly advises holding the 6 seminars in consecutive weeks.

Another plan has been considered for some of the more sparsely settled districts which may be referred to as a circuit rider plan. This plan includes instruction in internal medicine, pediatrics, gynecology, and obstetrics to be arranged by 3 instructors in these subjects. In a district that would choose such a plan a series of meetings would be arranged, possibly in consecutive weeks. Each individual meeting would consist of a lecture or didactic hour to be followed by a clinical period. The local members of the group would be expected to provide clinical material for this clinical instructional period and the instructor would arrange his discussion of diagnosis and treatment around the features of these cases presented.

Would your county society be interested in such a plan?

Please communicate at the earliest possible time with Charles L. Brown, M.D., 3401 N. Broad Street, Philadelphia, chairman of the Committee on Graduate Education, by answering the brief questionnaire attached.

Respectfully yours,
Erwin D. Funk, Reading,
Louis J. Hampton, Stroudsburg,
Mark K. Gass, Sunbury,
John L. Atlee, Jr., Lancaster,
Lorenzo G. Runk, Philipsburg,
Wilbur E. Turner, Montgomery,
T. Palmer Tredway, Erie,
Kelse M. Hoffman, Franklin,
William A. Bradshaw, Pittsburgh,
George S. Enfield, Bedford,
Donald Guthrie, Sayre,
Charles L. Brown, *Chairman*,
COMMITTEE ON GRADUATE EDUCATION.

Questionnaire

(1) Do you wish to use the Seminar Plan in 1941?

(2) Are you interested in the Circuit Rider Plan, as described in the enclosed letter?

(3) Have you other comments or recommendations to make to the Committee on Graduate Education?

(Signed)

Returns

Replies in the negative to questions (1) and (2) were received from the following county medical societies: Berks, Blair, Bradford, Cambria, Centre, Luzerne, Mercer, Susquehanna, Venango, Washington, Wayne-Pike, and Wyoming. The following reported plans under way: Fayette, Lehigh, Lycoming, McKean, Montour, Schuylkill, Warren, and York-Adams.

The following stated that their members look forward to attending the annual 5-day Postgraduate Institute of the Philadelphia County Medical Society: Chester, Delaware, and Montgomery County Medical Societies.

A number of the smaller county societies which have previously united with adjoining counties in a combined annual postgraduate seminar gave as a reason for not participating this year the fact that several of their members are absent in national military service.

Believing that methods employed in other states for meeting this urgent need might be of interest, we set forth a "campus" method which, we are confident, would have a tremendous appeal if adopted in the Keystone State. This plan was reported by Dr. O'Brien of Minnesota at the 1941 Regional Conference held annually, in February, in Chicago, by representatives of interested state medical societies, health departments, etc.

William A. O'Brien, M.D., Minneapolis, Minn.: Minnesota has abandoned the use of the term "postgraduate" and has substituted the term "continuation study program." It includes reading and writing; lectures alone are not considered sufficient. A building on the state university campus capable of furnishing living quarters for 78 persons has been used in the past 5 years to give 90 separate courses in from 3-day to 6-day residency costing the subscribers $2.75 per day for room and meals. Any subscriber may bring his wife with him on the same terms.

Courses are arranged for specialists, semispecialists, and general practitioners. Their programs are never crowded. There are no evening meetings. All proceedings are mimeographed and free discussions are featured.

In addition, the state committee provides library service for member speakers scheduled as county medical society monthly meeting speakers and announce a planned program for a given year, hoping that many county medical societies will adopt it; e. g., January subject—Common Cold, Influenza, and Pneumonia; February subject—Backache, etc. Plan to discuss different phases of the same monthly subjects for 5 consecutive years. The state committee will supply neighborhood newspaper and radio publicity on each month's subject.

EXCERPTS FROM SECRETARY'S REPORT TO THE BOARD OF TRUSTEES

Your secretary submits the following report for consideration preparatory to the meeting of the Board of Trustees which will be held in the Board Room of the headquarters building, 230 State Street, Harrisburg, on Tuesday, May 13, 1941, at 9:15 a.m., daylight saving time.

Payment of Annual Dues

On this date the secretary's office has received the 1941 dues of 8772 members; on the same date last year, of 8725.

Members of the board who may read in the Officers' Department of the May PENNSYLVANIA MEDICAL JOURNAL the detailed account of "Payment of 1941

Dues" by the various component societies will doubtless observe in certain counties a falling off in the usual high percentage of dues annually paid on Mar. 31. In several instances it will be found that this is in all probability due to inexperience of newly installed county society secretaries.

In addition to the apparent delinquency thus explained, it should be noted that the 1941 dues of a total of 237 members ($2370) have not been received because they are absent in national defense service. This makes a total of 9009 members now in good standing.

In this connection it is a pleasure to record, as has been pointed out in the JOURNAL from time to time, that the following county medical societies* are paying the 1941 State Medical Society dues of members absent in the service: Beaver, Bucks, Columbia, Jefferson, Northampton, and Venango.

It may prove of interest to note the ultimate accuracy of the estimate reported Dec. 20, 1940, to component county society secretaries to the effect that not more than 300 members of the State Society will be called to active defense duty during the year 1941. However, with the recently announced need for additional medical officers in 1942 and the not totally unexpected retention in service of some who may have hoped to return to private practice after one year's service, it seems wise to anticipate that a considerably larger number of our members will be absent in service during the next fiscal year of our society.

1941 Councilor District Meetings

Annual councilor district meetings have already been held or have been announced to take place as follows:

Apr. 17—Dr. Anderson, Tenth District, Beaver Falls.
May 9—Dr. Harley, Seventh District, Williamsport.
June 12—Dr. Samuel, Fourth District, place to be announced.
June 17—Dr. Brennan, Third District, and Dr. Mayock, Twelfth District, Scranton Country Club.
June 19—Dr. Gannon, Eighth District, *S. S. South American* out of Erie.
June 25—Dr. Brumbaugh, Sixth District, Juniata College, in Huntingdon.
June 26—Dr. Lorenzo, Ninth District, Punxsutawney.
Aug. 21—Dr. Deckard, Fifth District, Lancaster.
Sept. 11—Dr. Buyers, Second District, Allentown.

Medical Defense Service

The subject of modification of our society's medical defense service to its membership was discussed in published (Sept.) reports to the 1940 House of Delegates by the then chairman of the Board of Trustees, by the councilor for the Tenth District, who since that time has been chosen chairman of the Board of Trustees, and by the secretary of the society. To the latter the board assigned the task of further study of the subject with recommendations to be made at the May meeting of the board.

The proposal to modify the service first originated in the prospect of our society's being required to pay federal income taxes as well as Social Security taxes because of its definitely rendering this material (non-educational) service to its members, and also because of objections by the American Bar Association on the basis of being thus engaged in contract law practice—for these and other reasons all other state medical societies have given up this material service (payment of attorneys' fees) to their members, but have continued and strengthened the policy of moral and active support in the preparation and the defense in court of approved applicants.

An added reason for contemplation of a change in the form of defense service promised members of our society has been the consideration of proposing to the House of Delegates that a portion of the accumulated Medical Defense Fund be segregated as the nucleus of a reserve fund for the development of a pension service, mutually supported, for retired employees of the society.

At present there is in the Medical Defense Fund approximately $46,500 in cash and $22,000 (market value) in securities, or a total of $68,000. The income from investments and deposits in this fund for the year ending Sept. 1, 1940, was $1568. The average yearly expenditure for attorneys' fees in the defense of our members for the 6 years ending Sept. 1, 1940, was $1000. Apparently, judging from the current year's experience, this average sum will not be exceeded this year.

Is it not apparent from this experience and the above statement of assets that the House of Delegates, even if not prepared at present to give up this material service, might at least agree to the segregation of part of the above total of assets in a fund for the contemplated pension reserve mentioned?

It should not be forgotten that the greatest service from our medical defense system has not been to the 1 to 4 members who have had their attorneys' fees paid by the society each year during the past 6 years, but is a less tangible service to thousands of our members who carry commercial indemnity insurance, through premium rates more reasonable in the State of Pennsylvania than in most other states of the Union. This is due to the equitable manner in which the Committee of Council of The Medical Society of the State of Pennsylvania and the Board of Censors of the component county societies have collaborated during the preparation and conduct of trial of applicants recommended and approved for medical defense. This latter type of service should be continued on an even more liberal and effective scale.

As a result of our society's 35 years' judicious service to members, commercial indemnity insurance companies that do not sell their defense services in contiguous states sell their service to our members at a rate one-third less than members in such other states are required to pay to other companies.

During the past 7 years an allotment of only 10 cents from each member's annual dues has been set aside for addition to the Medical Defense Fund. From the above statement of income from accumulations it is apparent that further allotment from annual dues is in no way essential to continuation of the service in its present form.

If the Board of Trustees is in sympathy with the foregoing statements, they might bring the subject to the attention of the 1941 House of Delegates by proposing for consideration in 1942 the deletion of Section 2 of Article 9 of the constitution and subsequently appropriately altering Section 11 of Chapter 5 of the by-laws.

Respectfully submitted,
WALTER F. DONALDSON, *Secretary.*

May 9, 1941.

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* The Montgomery County Medical Society has more recently been added to this welcome list.

1941 SECTION ON SURGERY

There will be a slight departure from the usual program in that the first day, Oct. 7, will be devoted to traumatic surgery. Eight papers will be presented on industrial and war surgery.

Oct. 8 and 9 will be devoted to interesting papers on general surgery, 7 or 8 papers each day.

As guest speakers, we are fortunate in having Dr. Edward S. Welles, of Saranac Lake, and Dr. Leland S. McKittrick, of Boston.

Dr. Welles' paper, on Oct. 8, entitled "Surgery in the Presence of Pulmonary Tuberculosis," is based on 20 years' experience in general and thoracic surgery on tuberculous patients. Dr. McKittrick's paper, on Oct. 9, will deal with surgery in the diabetic patient based on an operative experience of approximately 1500 cases.

These two papers should be of great interest not only to the surgeon but also to the general practitioner and internist.

COMMITTEE ON MEDICAL PREPAREDNESS

To the President and Members of the Board of Trustees of The Medical Society of the State of Pennsylvania:

Since our last formal report made to your board, many of the developments of the Medical Preparedness program in Pennsylvania have reflected growing understanding of the problem involved on the part of a thousand or more examining physicians connected with the 422 Selective Service registration boards throughout the state.

As a result, the contrasts between rejection by Selective Service board examining physicians and Army induction board physicians have gradually shown a decrease, because Selective Board medical examiners now know better just what Army requirements are. Many of the steps on the part of the Pennsylvania Preparedness Committee in their close and enjoyable co-operation with the Pennsylvania Headquarters for Selective Service, as published in The Pennsylvania Medical Journal and in numerous county medical society bulletins, have helped to bring about this and other evidences of improvement.

The entire selection procedure, however, being developed as it is by the trial and error method will no doubt continue to show new methods and improvements, provided it can be maintained free of political influence.

The entire subject of medical preparedness has already been presented by President Francis F. Borzell, a member of our committee, at meetings of the Tenth and the Seventh Councilor Districts, and he is prepared to continue this activity throughout the remainder of his term as president.

The growing interest in the subject, which will doubtless remain of considerable importance for a number of years, suggests the advisability of your board considering the wisdom of sponsoring an adequate round-table discussion on this subject at the Pittsburgh session of our State Medical Society, Oct. 6-9. A review of the program as developed to date and to be completed Tuesday afternoon, May 13, by the Scientific Work Committee, Dr. Walter M. Bortz, of Greensburg, chairman, indicates Tuesday morning from 9:30 to 11 as the only open period for such a round table.

When the current questionnaire survey of physicians under 66 years of age who should be available for all forms of defense service, whether military, industrial, institutional, or community medical service, is completed, such information will be available not only at the headquarters of the American Medical Association but at the headquarters of The Medical Society of the State of Pennsylvania, as well as being in the hands of the chairman of the Medical Preparedness Committee in each Pennsylvania county.

This piece of work has necessitated considerable expenditure through your committee and the secretary's office for stenographic assistance, postage, printing, etc. This will undoubtedly require an extension of the committee's budget for 12 months ($1000) and your board through its Finance Committee is herewith respectfully requested to grant an additional $500.

Respectfully submitted,
Charles H. Henninger, *Chairman,*
Francis F. Borzell,
Walter F. Donaldson,
Pennsylvania Committee on Medical Preparedness.

CHILD HEALTH COMMITTEE

To the President and Members of the Board of Trustees of The Medical Society of the State of Pennsylvania:

It is a pleasure to submit a progress report of your Child Health Committee program.

In the State of Pennsylvania there are 60 county medical societies representing 67 counties; Cameron, Forest, Fulton, Snyder, Sullivan, and Union have no organization but are affiliated with adjoining county societies. In 1939 a total of 55 county medical societies appointed county child health committees covering 56 counties; in 1940 the number was increased to 56 county societies with active child health committees covering 58 counties. New counties coming within the fold this year are Bedford, Chester, and Potter. In 2 of the counties not having a medical society, namely, Sullivan and Union, local physicians represent the child health committee and co-operate with our state program. Therefore, to date there is but one county society not having a regularly appointed committee, namely, Lebanon. It facilitates the work of the committee to have the personnel of the child health committees printed in the State Society's annual roster.

Thirty-six county society committees have sponsored a federal project; however, 2 of these are without any assistance since help is not available from the relief rolls at this time. The entire state project employs 136 WPA workers; 12 of this number are working in a supervisory capacity for statistical work and 8 as field workers. Five supervisors who have been specially trained in social work and thoroughly understand medical ethics are continually traveling throughout the state as ambassadors directly from the office of your chairman. I personally meet these traveling supervisors about once in 2 months to go over all matters on hand and give them the necessary instructions to insure the proper carrying out of our program without any interference with the private practice of physicians.

It has been called to my attention that there has been some confusion as to the functions of the Child Health Committee and the Committee on Pediatric Education. As handed down to me from my predecessors, I have gathered the following to be our functions and have been guided accordingly:

"The functions of the Child Health Committee are primarily to represent public relations of the State Society on matters pertaining to child health; to supervise and protect the health of children, with special responsibility for children in relief families; to promote periodic health examinations; to discover and correct defects through the development of a successful follow-up of each case; to promote early vaccination against smallpox; to advise a wider use of diphtheria prevention and the Schick test; to advise the wider use of the tuberculin test; to classify cases of malnutrition and to do everything possible to correct such; to educate the public in general as to the value and need of periodic health examinations, correction of defects, immunizations, and a properly balanced diet; to stimulate physicians to carry out the same procedures in their private practice."

In short, the aim of the Child Health Committee is to educate the public, and the aim of the Committee on Pediatric Education is to plan graduate education facilities in pediatrics in and through county medical societies.

Our program has demonstrated its value to county groups. Increased appropriations have been forthcoming to supply eye glasses and to pay small hospital fees for tonsil and adenoid operations; transportation is being offered in many localities in the rural areas for both worker and children. In some instances community councils and welfare federations are giving increased financial assistance. The work accomplished is of such value that permanency is desirable. *The day may soon come when we will be unable to obtain federal aid.* At the present time an effort is being made to secure as much support as possible through other agencies with financial backing so that budget committees may consider the matter during the present year. We believe that effective permanent planning depends upon the support and interest of the established agencies as well as upon volunteer groups interested. Our home visiting has already been curtailed and we are making an effort through volunteer organizations, such as parent-teacher associations, the Junior League, and woman's auxiliaries to county medical societies, to fill in this gap.

We are doing all we can to stimulate medical leadership with local control of our child health and welfare agencies. We are already deriving benefits from our efforts. We are continually receiving reports of agencies or organizations applying to the county medical society for advice before they attempt to conduct any health program.

For years the Parent-Teacher's Association in the state has conducted summer round-ups, at which time preschool children about to enter school, regardless of ability to pay, are examined, vaccinated, immunized against diphtheria, or given a Schick test. I have had several conferences with Parent-Teacher's Association heads, and as a consequence this practice is to be amended, hereafter they will educate the parents as to the value of such work, refer those who are able to pay to private physicians, and then ask the co-operation of the local child health committee to serve those who cannot afford to pay.

The last federal project (WPA) which was approved for our Child Health Committee began Sept. 5, 1940; $364,483 was allotted. As of Apr. 28, 1941, a balance of $275,281.25 remains; expenditures to date are for labor, administration, and travel costs for an 8-month period. The monthly payroll averaged approximately $11,200. In considering these expenditures, however, there are certain factors which should not be overlooked. Project funds are a relief appropriation. Of the 136 employees, 122 are from relief rolls. Only 14 are nonrelief appointments, these nonrelief appointments being made for the expert supervisory and training purposes. Practically all of the relief certified employees have dependents.

In a statistical report recently received from the Department of Public Assistance, the average monthly relief cost per family of 3 persons, in view of the cost of living in this state, approximates $45 per month. Where the family composition exceeds this number of persons, the relief costs are proportionately higher. The average monthly salary paid to a county worker is $80. This wage is given in lieu of a relief grant and gives reimbursement for service.

Another item to consider is the fact that many of the workers are untrained—some young girls employed for the first time. The project, therefore, has the additional responsibility of training and striving for efficiency regardless of inexperience and personality difficulties, which in some instances restrict a worker's opportunity for private employment. This federal project, therefore, has a twofold purpose:

1. It provides employment which rehabilitates and trains a relief recipient for private employment.
2. It enables the state and county committees to utilize clerical assistance in fostering its program.

Expenses of The Medical Society of the State of Pennsylvania for the 8-month period—$862.69.

Printing, master file cards, typewriter and repairs	$223.17
Harrisburg office (including rent—$287)	504.49
Wilkes-Barre office	135.03
	$862.69

At a recent similar discussion at Cornell University on the subject "Organizing Communities for Health Care," the main questions asked were: "What local resources are available?" "What is being done about it?" Someone answered: "The Pennsylvania State Medical Society is smart; they sponsor a federal project which operates in local communities."

There is a growing belief throughout the state that the day will have to come for physicians to receive some reimbursement for all public health work. It has been hinted to me that there may be a possibility of the Department of Public Assistance paying physicians' fees for periodic health examinations and corrective measures in children. We have suggested a schedule totaling 22 office visits at $1.00 each during the first 6 years of life of children on relief. This, with a free supply of whooping cough vaccine virus, diphtheria toxoid, and Schick test material, I feel will assure the children of relief families much better care than they ever received before. The proposed calls would be divided as follows: 6 for the first year of life; 4 during the second year; 2 during the third year; thereafter once a year until 6 years of age, also 7 intervening calls for immunizations.

Certainly, if we can supply each child in relief families proper medical supervision during its first 6 years of life, including physical examinations, dietary and hygienic advice, and immunizations, it ought to be worth *$22* per preschool child to the commonwealth for such services. We thereby would be assuring better health during the first year of life, which too often carries such a high mortality rate, decreasing the number of deaths from whooping cough, decreasing the incidence of malnutrition by teaching the families how to balance the diet, and insuring proper protection against diphtheria and smallpox. With all this accomplished before they enter school, the public would not hear so much about the so-called neglected age or runabout age between 2 to 6, and there would be no need for familiar wholesale summer round-ups by any lay organizations because desirable results would have already been accomplished through proper medical channels.

During the past year we have examined as follows:

1940-1941	*Grand Total From 1933 to Date*
Children examined—10,360	185,127
Re-examinations—1442	13,382
Vaccinations—3131	33,536
Diphtheria immunizations—6188	62,132
Eye corrections—500	7,662
Ear corrections—119	2,181
Tonsils—1937	25,133
Dental work—2080	32,638

Nutrition instructions were given 69,591 mothers in 50 different counties since 1933.

From time to time form letters are sent to all county society committee chairmen to arouse their interest in general child health and to stimulate them to educate the public to be "child health" conscious.

We find an increasing demand from lay organizations for speakers on child health. We also find more co-ordination and co-operation by health agencies endeavoring to prevent duplication of effort.

It is not my desire to give you a tiresome, voluminous report. The task of the chairman of your Child Health Committee is an arduous one and, I believe, to do a perfect job it would require full-time service.

Respectfully submitted,

Francis T. O'Donnell, M.D., *Chairman,*
Child Health Committee.

HEALTH SHOW

Dr. Francis F. Borzell, *President,*
The Medical Society of the State of Pennsylvania,
230 State St.,
Harrisburg, Pa.

Dear Dr. Borzell:

Now that the Health Show is a demonstrated success, I want to take advantage of the opportunity to thank you most heartily for your co-operation, and for that of your associates. Please convey our thanks, formally, to those of your people who have advised or assisted.

Visitors at the show have found your exhibit interesting and instructive, and have commented on it.

In spite of disagreeable weather, attendance at the Health Show has been good, though it has been less than it would otherwise have been.

Since spring is now officially here, we can expect better weather and even better attendance. We therefore hope to hold the Health Show somewhat longer than originally planned, for we are convinced that it will attract larger numbers of people with each succeeding week.

Again let me say that the Buhl Planetarium staff is deeply appreciative of your personal appearance at the formal opening on Feb. 27 and your society's part in this effort to make Pittsburghers health-minded.

Sincerely,

C. V. Starrett, *Associate Director,*
The Buhl Foundation,
Pittsburgh, Pa.

Apr. 4, 1941.

MEETINGS HELD RECENTLY AT
230 State Street

Jan. 20, 1:30 p.m.—Public Health Legislative Conference.

Jan. 22, 2 p.m.—Pennsylvania Conference of Professional Licensees.

Feb. 4, 9:15 a.m.—Board of Trustees.

Feb. 4, 1:45 p.m.—Committee on Scientific Work.

Feb. 5, 10 a.m.—Executive Committee of Medical Service Association of Pennsylvania.

Feb. 5, 1:45 p.m.—Committee on Graduate Education.

Feb. 14, 1:30 p.m.—State Healing Arts Advisory Committee.

Feb. 19, 2 p.m.—Pennsylvania Conference of Professional Licensees.

Mar. 12, 2 p.m.—Executive Committee of Board of Trustees.

Mar. 12, 2 p.m.—Committee on Medical Economics.

Mar. 18, 2:15 p.m.—Committee on Amendments to Medical Practice Act.

Mar. 19, 2 p.m.—Pennsylvania Conference of Professional Licensees.

Apr. 1, 10 a.m.—Board of Trustees.

Apr. 8, 2 p.m.—Committee on Public Health Legislation.

Apr. 16, 2 p.m.—Pennsylvania Conference of Professional Licensees.

Apr. 23, 2 p.m.—Board of Directors of Medical Service Association of Pennsylvania.

Apr. 29, 1 p.m.—State Healing Arts Advisory Committee.

May 13, 9:15 a.m.—Board of Trustees.

May 13, 2 p.m.—Committee on Scientific Work.

May 13, 2 p.m.—Committee on Nutrition.

May 21, 2 p.m.—Pennsylvania Conference of Professional Licensees.

May 21, 2:15 p.m.—Committee on Amendments to Medical Practice Act.

May 22, 2 p.m.—Committee on Medical Economics.

May 22, 2 p.m.—Executive Committee of Board of Trustees.

May 22, 3:30 p.m.—Joint Meeting of Executive Committee of Board of Trustees and Committee on Medical Economics.

May 23, 11:15 a.m.—Executive Committee of Pennsylvania Conference of Professional Licensees.

1941 SECTION ON OBSTETRICS AND GYNECOLOGY

The officers of the Section on Obstetrics and Gynecology have arranged a very attractive program for their meetings which will be held on Tuesday and Wednesday afternoons.

It is interesting to note the increase in the registration in this section in the 3 years that it has been meeting. In 1938 the registration was 107, in 1939 it was 184, and in 1940 it had increased to 220. It is hoped that the registration this year will be even better.

The officers of the section have been extremely fortunate in securing two guest speakers this year, one for each afternoon session, Dr. Virgil S. Counseller, of the Mayo Clinic, and Dr. James L. Reycraft, of Cleveland. Both of the guest speakers are nationally known and can be relied upon to present their subjects in an interesting and instructive manner.

The program will consist of papers on gynecologic and obstetric complications, as well as original treatises on associated subjects.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

New (49) and Reinstated (10) Members

ALLEGHENY COUNTY (Pittsburgh)

Gerald J. Carlin
Charles W. Cohn
Enrico G. C. Coscia
James F. Henry
Charles G. Nickens
Samuel Glenn Major
Thomas R. Purpura
Edward H. Robinson
Carl E. Wasmuth
Zelda Ziskind
James H. McQuade, Bellevue
H. Glenn Sample, Jr., Wilkinsburg
Francis S. Tolodziecki, Braddock

(Reinstated) McKinley C. King.

ARMSTRONG COUNTY

(r) Burton C. Slease.

BLAIR COUNTY

Raymond J. Furlong	Cresson

BRADFORD COUNTY

(r) Leo J. Laux, J. Clifton Lynch.

CAMBRIA COUNTY

Peter Paul Andrews	Cresson
Robert Klein	Vintondale
Glenn C. Stayer	Johnstown
Myer H. Tolochko	New Florence

CHESTER COUNTY

Edgar Lee Porter	Embreeville

(r) Guy T. Holcombe.

DELAWARE COUNTY

Frank C. Bender	Upper Darby
James J. Kelly	Darby

ERIE COUNTY

Erwin D. Zeman	Erie

FRANKLIN COUNTY

William A. Bender	Chambersburg
David R. Hess	Shady Grove

JEFFERSON COUNTY

Lewis R. Thompson	R. D., Luthersburg

LACKAWANNA COUNTY

Joseph A. Walsh	Olyphant

(r) Joseph P. Burke, Murray Finkelstein.

LANCASTER COUNTY

Thelma G. Boughton	Lancaster
George B. Sanders	"

LUZERNE COUNTY

John P. Gibbons	Hudson
Arthur J. Horvat	Duryea

MONTGOMERY COUNTY

Albert C. Shannon	Norristown

NORTHAMPTON COUNTY

Lawrence E. Schuster	East Bangor

PHILADELPHIA COUNTY (Philadelphia)

Solon R. Boynton, Jr.
Thomas Anthes Campbell
Mayme Esther Cushnie
H. Franklin Flanagan
Harold Frankel
Seymour Goldenberg
M. Agnes Gowdey
Harvey D. Leinbach, Jr.
John Bernard McNally
Perry Scott MacNeal
Karl E. Paschkis
Raymond E. Seidel
Wallace F. Sliwinski
Evan Lloyd Watkins
George Parke Rouse, Jr., Ridley Park
Joel J. Schwartzman, Oaklyn, N. J.

(r) Benjamin Gruskin, George M. Mandelbaum.

TIOGA COUNTY

David E. Lewis	Knoxville

Removals (1), Resignations (7), Transfers (9), Deaths (14)

ALLEGHENY COUNTY: *Removal*—Charles W. Cohn from Pittsburgh to Miami, Florida. *Resignations*—Omar T. Cruikshank, Byron D. White, Pittsburgh; Norman R. Goldsmith, New York City; Harold I. Jubelirer, Los Angeles, Calif. *Death*—James W. Robinson, Pittsburgh (Univ. Pa. '07), Mar. 30, aged 56.

BEDFORD COUNTY: *Death*—Walter F. Enfield, Bedford (Med.-Chi. Coll., Phila., '94), Apr. 12, aged 69.

BLAIR COUNTY: *Transfer*—Francis E. Goodman, Altoona, from Clearfield County Society.

BUTLER COUNTY: *Resignation*—Charles S. McGivern, Atlantic City, N. J.

CAMBRIA COUNTY: *Death*—George W. Conrad, Johnstown (Eclectic Med. Coll. '05), Apr. 6, aged 61.

CHESTER COUNTY: *Transfer*—James S. Dean, Pennhurst, from Philadelphia County Society.

CLEARFIELD COUNTY: *Death*—J. Paul Frantz, Clearfield (Univ. Pa. '10), Apr. 8, aged 56.

CLINTON COUNTY: *Death*—John M. Dumm, Mackeyville (Univ. Pa. '78), Mar. 8, aged 83.

ERIE COUNTY: *Transfer*—David L. Cooper, Erie, from Allegheny County Society.

INDIANA COUNTY: *Transfer*—Hugh Graham Bruce, Iselin, from Crawford County Society.

JEFFERSON COUNTY: *Resignation*—Paul E. Noonan, Philadelphia.

LACKAWANNA COUNTY: *Transfer*—Charles R. Yhost, Scranton, from Dauphin County Society.

LUZERNE COUNTY: *Deaths*—William Fritchie Roth, Wilkes-Barre (Hahn. Med. Coll. '94), Apr. 1, aged 69; John J. Dailey, Hazleton (Med.-Chi. Coll., Phila., '05), Mar. 28, aged 59.

McKEAN COUNTY: *Transfer*—John L. Neill, Smethport, from Franklin County Society.

MERCER COUNTY: *Transfer*—Thomas K. Rathmell, Sharon, from Montgomery County Society.

MONROE COUNTY: *Death*—Oren B. Richards, Moosic (Univ. Rochester '35), Mar. 30, aged 30.

NORTHAMPTON COUNTY: *Transfer*—Clement R. Hanlon, Bethlehem, from Luzerne County Society.

NORTHUMBERLAND COUNTY: *Transfer*—John H. C. Wentzel, Sunbury, from Mifflin County Society.

PHILADELPHIA COUNTY: *Deaths*—Frank C. Hammond, Philadelphia (Jeff. Med. Coll. '95), Apr. 12, aged 66; Collier F. Martin, Philadelphia (Univ. Pa. '00), Mar. 22, aged 68; Arthur Newlin, Philadelphia (Univ. Pa. '99), Apr. 13, aged 67; William W. Walsh, Chicago, Ill. (Med.-Chi. Coll., Phila., '09), Mar. 29, aged 60; James H. Baldwin, Philadelphia (Univ. Pa. '00), Apr. 18, aged 70; Joseph P. Ball, Philadelphia (Med.-Chi. Coll., Phila., '98), Apr. 15, aged 76.

YORK COUNTY: *Resignation*—Harry W. Howden, Steelton.

Net gain in members during April 38

CONTRIBUTIONS TO MEDICAL BENEVOLENCE FUND

The Committee on Medical Benevolence makes grateful acknowledgment of the following contributions to the fund:

Woman's Auxiliary, Philadelphia County Medical Society	$100.00
Woman's Auxiliary, Bucks County Medical Society	50.00
Woman's Auxiliary, Greene County Medical Society	25.00
Total contributions since 1940 report ...	$1323.85

Does the attending physician's failure to "manage his patient as a whole therapeutically" explain many unsatisfactory results? See page 1194.

PAYMENT OF PER-CAPITA ASSESSMENT

The following payment of per-capita assessment has been received since Mar. 31. Figures in first column indicate county society numbers; second column, State Society numbers:

Mar. 31	Lycoming	30	6778	$10.00
Apr. 2	Dauphin	143–213	6779–6849	710.00
	Lehigh	1–162	6850–7007	1580.00
	Lehigh	66, 78, 141, 157*		
	Beaver	86–101	7008–7023	160.00
	Beaver	91–92**		
	Montgomery	245–252	7024–7030	70.00
	Montgomery	247*		
	Monroe	33	7031	10.00
	Blair	101–104	7032–7035	40.00
	Erie	127, 146–156	7036–7047	120.00
	Berks	187–200	7048–7059	120.00
	Berks	198–199*		
	Fayette	95–109	7060–7074	150.00
	Washington	125–129	7075–7079	50.00
	Mercer	83–87	7080–7084	50.00
	Northampton	144–150	7085–7091	70.00
3	Northampton	151–152	7092–7093	20.00
	Lebanon	51	7094	10.00
	Adams	28–29	7095–7096	20.00
	York	159	7097	10.00
	Indiana	51–52	7098–7099	20.00
	Venango	47	7100	10.00
	Beaver	102	7101	10.00
	Lackawanna	209–240	7102–7133	320.00
3	Allegheny	2, 988–1417	7134–7557†	4200.00
4	Schuylkill	120–139	7558–7577	200.00
	Northumberland	68–74	7578–7584	70.00
	Lancaster	191–192	7585–7586	20.00
	Elk	29	7587	10.00
	Luzerne	291, 301–319	7588–7607	200.00
	Lycoming	113–117	7608–7612	50.00
5	Chester	92–105	7613–7626	140.00
	Chester	106*		
	Bucks	63–73	7627–7637	110.00
	Delaware	240–247	7638–7645	80.00
7	Cumberland	34–35	7646–7647	20.00
	Potter	13	7648	10.00
	Mercer	89	7649	10.00
	Philadelphia	1532–2311	7650–8429	7800.00
8	Cambria	169–171	8430–8432	30.00
	McKean	37–43	8433–8439	70.00
	Indiana	53	8440	10.00
	Carbon	35–36	8441–8442	20.00
	Erie	157–161	8443–8447	50.00
9	Centre	31	8448	10.00
	Franklin	68	8449	10.00
10	Montgomery	253–260	8450–8457	80.00
	Beaver	103	8458	10.00
11	Lackawanna	241–244	8459–8462	40.00
14	Indiana	54	8463	10.00
	Monroe	34	8464	10.00
	Armstrong	46–47	8465–8466	20.00
15	Luzerne	320–323	8467–8470	40.00
	Huntingdon	26	8471	10.00
	Columbia	43	8472	10.00
	Crawford	60	8473	10.00
	Lancaster	193–196	8474–8477	40.00
17	Franklin	69–70	8478–8479	20.00

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* Exempt account military service.

** Exempt account military service; dues paid by county society.

† Includes 8 members exempt ½ year's dues account military service.

Apr. 17	Tioga	25	8480	$10.00
	Westmoreland		8481	10.00
18	Bradford	32–39	8482–8489	80.00
	Lackawanna (1940)	270–271	9202–9203	20.00
	Lackawanna	245–247	8490–8492	30.00
	Luzerne	324	8493	10.00
19	Venango	48	8494	10.00
21	Somerset	38	8495	10.00
22	Lawrence	70–71	8496–8497	20.00
	Mercer	90	8498	10.00
	Washington	130–132	8499–8501	30.00
	Clinton	16	8502	10.00
	Cambria	172–175	8503–8506	40.00
	Lackawanna	248	8507	10.00
24	Blair	105–106	8508–8509	20.00
	Huntingdon	27	8510	10.00
25	Columbia	44	8511	10.00
	Allegheny	1418–1446	8512–8538	260.00
	(2 exempt on account of military service)			
26	Fayette	110–113	8539–8542	40.00
	Venango	49	8543	10.00
28	Somerset	39	8544	10.00
	Bucks	74	8545	10.00
	Huntingdon	28	8546	10.00
	Lackawanna	249–250	8547–8548	20.00
	Beaver	104	8549	10.00
	Montgomery	261–262	8550–8551	20.00
	Jefferson	32–46	8552–8566	150.00

LIBRARY NEWS

Members desiring to borrow reprints from the library should send 25 cents in stamps to cover the postage and part of the expense of collecting the material. Address the Librarian, 230 State St., Harrisburg, Pa. Each package may be kept for a period of 14 days.

Between Mar. 1 and May 1, the following borrowers made use of the library:

Albert J. Ingham, Somerfield—*Pneumonia* (30 articles).

Milton Caplan, Pittsburgh—*Licensure* (9 articles).

George H. Hudson, Johnstown—*Blood Transfusion* (24 articles).

R. Stanley Bank, Harrisburg—*High Blood Pressure* (9 articles).

Merle R. Hoon, Pittsburgh—*Appendicitis* (21 articles).

Harold L. Meyers, Polk—*Parasites of the Intestines* (21 articles).

Philip Mertz, Pittston—*Impotence* (14 articles).

Earl Glotfelty, Waynesboro—*Undulant Fever* (10 articles).

David Johnston, Harrisburg—*Splenic Anemia* (13 articles).

Robert Johnston, Harrisburg—*Sex Hormones* (3 articles).

Robert L. Schaeffer, Allentown—*Perforation of the Gallbladder* (20 articles).

Herman L. Rudolph, Reading—*Facial Paralysis* (17 articles).

Alexander H. Stewart, Harrisburg—*Vertigo* (4 articles).

Lancess McKnight, Media—*Diseases of Negroes* (16 articles).

Herbert William Barron, Collegeville—*Cancer* (21 articles).

Wilbur W. Westfall, Somerset—*Alcoholism* (10 articles).

Allen Z. Ritzman, Harrisburg—*Achondroplasia* (10 articles); *Calcification* (3 articles).

Merle R. Hoon, Pittsburgh—*Peritonitis* (7 articles).

Earl C. Sherrick, Connellsville—*Anesthesia* (20 articles).

D. Allison Walker, Torrance—*Meningo-encephalitis* (30 articles).

Maurice S. Jacobs, Philadelphia—*Heart Diseases with Tuberculosis* (13 articles).

Andrew B. Buczko, Mt. Carmel—*Pneumoconiosis* (16 articles).

William Hutchison, McKeesport—*Therapy of Septicemia* (13 articles).

Richard Yoffee, Harrisburg—*Anesthesia in Obstetrics and Gynecology* (28 articles).

Frank D. Campbell, Bessemer—*Sulfanilamide and Sulfanilamide Derivatives* (22 articles).

Thomas R. Hepler, Harrisburg—*Therapy of Septicemia* (21 articles).

John L. Lavin, Swoyersville—*Therapy of Fractures* (26 articles).

Herman Hirsh, Harrisburg—*Muscular Dystrophy* (10 articles).

John V. Miller, Dillsburg—*Encephalomyelitis* (14 articles).

George F. Gracey, Harrisburg—*Bronchiectasis* (10 articles).

Raymer L. Mowry, Ingomar—*Trichinosis* (14 articles).

Samuel A. Rulon, Jr., Phoenixville—*Varicose Veins* (17 articles).

John M. Higgins, Sayre—*Impetigo Neonatorum* (14 articles).

Mathew H. Sherman, Harrisburg—*Rabies* (27 articles).

Richard Yoffee, Harrisburg—*Deafness* (61 articles).

Herbert Lenton, Carlisle—*Rhinitis* (22 articles).

Dick Renick, Dayton, Virginia—*Socialized Medicine* (7 articles).

George L. Laverty, Harrisburg—*Heart Examination* (3 articles).

Anna dePlanter Bowes, Harrisburg—*Vitamin Content of Milk* (2 articles).

John V. Foster, Harrisburg—*Cancer of the Lungs* (27 articles).

Samuel L. Grossman, Harrisburg—*Venereal Diseases* (4 articles).

Carl L. Danielson, Butler—*Cancer* (28 articles).

Wilbur E. Flannery, New Castle—*Insulin* (13 articles); *Diseases of the Pancreas* (19 articles); *Hypoglycemia* (21 articles).

Howard S. Reiter, Brownsville—*Pathology of Syphilis* (13 articles); *History of Syphilis* (11 articles).

H. C. Wallace, Pottsville—*Lead Poisoning* (3 articles).

Ella Spangler, Harrisburg—*Socialized Medicine* (8 articles).

James N. O'Brien, Harrisburg—*Menopause Disorders* (18 articles).

Forrest F. Smith, Hallstead—*Alopecia* (12 articles).

David C. Pewterbaugh, Chambersburg—*Lupus Erythematosus* (13 articles).

Charles P. Sell, Allentown—*First Aid* (10 articles).

Ralph D. Bacon, Erie—*Cancer of the Cervix* (11 articles).

John P. Harley, Williamsport—*Medical Ethics* (8 articles).

Ethel L. Milkins, Reading—*Vision and Hearing* (14 articles).

George W. Reese, Sunbury—*Chlorophyll Therapy* (2 articles).

Francis W. Joyce, Pittsburgh—*Blood Plasma Banks* (24 articles).

Kenneth S. Scott, Oakbourne—*Hospital Economics* (6 articles).

John L. Lavin, Swoyersville—*Ankle Dislocations* (2 articles).

Mrs. Paul G. Schoonmaker, Jr., Tyrone—*Socialized Medicine* (7 articles).

Louis W. Wright, Harrisburg—*Diseases of the Respiratory Tract* (17 articles).

C. L. Palmer, Pittsburgh—*Cancer* (25 articles).

Dale C. Stahle, Harrisburg—*Infectious Endocarditis* (2 articles); *Pneumonia Therapy* (17 articles).

Augustus S. Kech, Altoona—*Medicine and Surgery in Industry and Occupation* (14 articles).

Louis W. Wright, Harrisburg—*Diseases of Newborn Infants* (9 articles).

Charles A. White, Lilly—*Flatulence* (4 articles).

S. Dana Sutliff, Shippensburg—*Cancer* (29 articles).

Wallace T. Dodds, Pittsburgh—*Physicians* (16 articles).

Ray Parker, Johnstown—*Public Health* (17 articles).

Francis F. Hart, Chestnut Hill—*Hypothyroidism* (1 article).

Charles S. Bridenbaugh, Emlenton—*Venereal Diseases* (6 articles).

John D. Boger, Lebanon—*Cancer* (19 articles).

H. Ivan Brown, Reading—*Blood Transfusion* (18 articles).

Betty Hampton, Elizabethtown—*Socialized Medicine* (7 articles).

Ralph P. Beatty, Uniontown—*Nephritis* (4 articles).

Ralph C. Hough, Uniontown—*Uterine Ccrvix* (23 articles).

Amleto Acquaviva, New Castle—*Adherent Placenta* (14 articles).

Robert J. Nevin, Washington—*Intravenous Injections* (19 articles); *Blood Transfusion* (25 articles).

Geraldine Kephart, Elizabethtown — *Anesthesia* (29 articles).

Harold L. Meyers, Polk—*Epilepsy* (27 articles).

Henry T. Simmonds, Shamokin—*Diverticula of the Intestines* (18 articles).

Mrs. David E. Hoff, Harrisburg—7 journals.

Alfred E. Chadwick, Beaver Falls—*High Blood Pressure* (42 articles).

Edgar J. Deissler, Meadville—*Feeblemindedness* (17 articles).

Albert J. Guerinot, Pittsburgh—*Barbital Anesthesia* (13 articles).

Clinton F. Stofflet, Pen Argyl—*Progress of Medicine* (5 articles).

William D. Schrack, Jr., Harrisburg—*Typhoid* (18 articles).

Louis Weiss, Ambridge—*Low Blood Pressure* (15 articles).

THE FEDERAL TRADE COMMISSION CLAMPS DOWN ON A SCRANTONIAN

The Federal Trade Commission recently sent to the Journal office a notice of a complaint they had filed against the Scientific Manufacturing Co., Scranton, and its president, Howard J. Force. Two weeks later a notice giving the answer to the complaint was sent to the Journal office. These two notices were as follows:

Complaint

Scientific Manufacturing Co., Inc., 426 Prescott Ave., Scranton, and Howard J. Force, the corporation's president, have been served by the Federal Trade Commission with a complaint alleging misrepresentation in the sale of medicinal preparations.

According to the complaint, the respondents disseminate false advertisements in which they represent that their preparations "Pheno-Isolin" and "Pheno-Isolin Ointment" constitute competent and effective antiseptics and germicides, and possess substantial therapeutic value in treating skin infections generally, and about 20 specific ailments or conditions including ulcers, carbuncles, abscesses, athlete's foot, eczema, gangrenous conditions, diphtheria, and influenza. The complaint alleges that the respondents' claims exceed actual accomplishments.

The complaint further charges the respondents with representing that their preparation "Dialin" constitutes a remedy and effective treatment for diabetes; effects a chemical change in the blood so as to reduce the quantity of sugar in the blood; assists the pancreas to produce insulin in the natural way; eliminates the unnatural thirst of diabetes victims; and corrects other abnormal conditions caused by diabetes, when such are not the facts.

According to the complaint, the respondents circulated leaflets captioned "What the Profession is Doing with Pheno-Isolin" and "What They Say About Dialin," such literature containing purported testimonials of physicians recommending the respondents' preparations. The complaint alleges that the respondents' preparations are not used or recommended by the medical profession generally.

Charging violation of the Federal Trade Commission Act, the complaint grants the respondents 20 days for filing answer.

Answer to Complaint

Scientific Manufacturing Company, Inc., and Howard J. Force, president of the corporation, Scranton, have filed an answer to a Federal Trade Commission complaint which alleged misrepresentation in the sale of medicinal preparations.

The answer admits that the respondents disseminated advertisements concerning their preparations "Pheno-Isolin" and "Pheno-Isolin Ointment," but denies that the advertisements were false or misleading or that they were for the purpose of inducing directly the purchase of the products, asserting that the testimonials of users of the products and of reputable physicians are true and not false or misleading. The answer declares that the preparations have been used extensively by coal companies in the anthracite mining regions and in various hospitals throughout the United States.

The answer avers that the respondents have at no time represented that the preparation "Dialin" constitutes a cure or remedy for the treatment of diabetes, but have at all times stated that it was "an aid in ameliorating" that condition, and that these representations were made to them by leading chemists and doctors who have used and still are using the preparation with good results. The answer declares further that none of the advertisements disseminated are false, deceptive, or misleading whenever the preparations have been given a fair test.

Hearings will be held in due course.

HEALTH OFFICERS MAKE RECOMMENDATIONS TO CONGRESS

Recommendations that Congress authorize the United States Public Health Service to treat men rejected for general military service because of correctable physical defects was made by the Thirty-ninth Annual Conference of State and Territorial Health Officers, May 2, at the close of a 4-day session.

The conference, consisting of all state and territorial health officers, met with the Public Health Service to determine mutual solution of national health problems, many of them raised by national defense.

Pointing out that "nothing has been done on a national scale towards rehabilitating men found unfit for military service," the conference's Committee on Hospital and Medical Care urged legislation by Congress providing funds as well as authority to the Public Health Service to accept rejected draftees as beneficiaries eligible for medical treatment upon application to the Surgeon General.

The committee reported that 42 per cent of all draftees are rejected for military service for physical defects, many of them correctable.

The conference also recommended revision of regulations governing the allotment and payment of Federal Venereal Disease Control funds to permit states to cut off aid to county and local health departments where police authorities fail to repress prostitution. The revision was urged by the conference's Committee on Venereal Disease in view of the growing threat of prostitution to the health of men in military service.

The committee reported that "in some areas where armed forces or defense workers are concentrated, recent studies have indicated the presence of prostitutes equal to one per cent of the population. Under such conditions, so great is the number of exposures of the men and boys to infected or potentially infected prostitutes that there is grave danger that venereal disease rates will increase greatly."

The Venereal Disease Control Act authorizes the Surgeon General of the U. S. Public Health Service to allot funds for venereal disease control to states with approved programs.

Another recommendation urged reciprocity between states requiring blood tests for syphilis. Such reciprocity would permit prospective marital partners to have blood tests in their own states with the assurance that the test would be accepted by the state in which the marriage was to take place. There are at present 24 states requiring premarital tests.

The conference recommended that men called for military or naval service and found infected with uncomplicated gonorrheal urethritis be promptly inducted into the service and treated, rather than turned back to the civilian population where the infection may be spread. It was pointed out that modern methods of treating gonorrhea result in prompt cures in a high proportion of cases.

Also recommended was a plan to prevent spread of venereal disease among the civilian population by men infected during military service upon their return to civilian life.

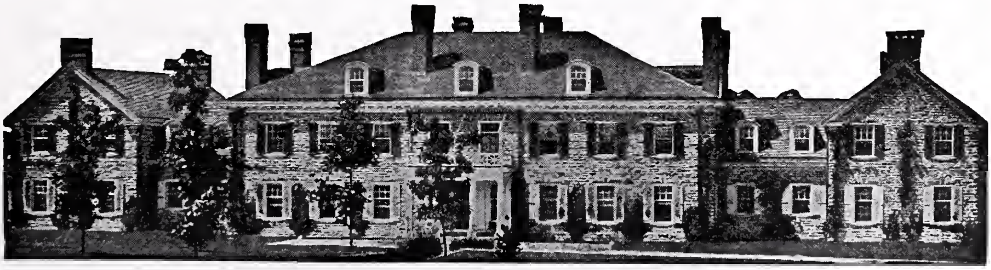
The plan proposes that blood tests and a thorough physical examination to detect venereal disease be given each man before his discharge from military service; second, that sufficient treatment be given by the Army or Navy to infected men to render them noninfectious before discharge into civilian life.

Copies of this plan will be sent to the secretaries of War and Navy Departments and to the Federal Security Administrator.

The conference's Committee on Venereal Disease pointed out that more than a million men will be inducted into the army each year for the next 5 years and, in spite of the most effective venereal disease control program, it is certain that a considerable number of these men will be infected during their service period.

The conference recommended that all states work out civil defense programs including evacuation of population centers, provision of refuge for children, and adequate hospital facilities. In all instances these details should be the responsibility of the state health departments.

A final resolution urged that public health personnel be employed only on a merit basis.—*United States Public Health Service.*



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2. Protein Adjustment—protein is maintained at higher level than in breast milk to compensate for biological difference of cow's milk protein, and to provide amply for the greater needs in early months when growth is fastest.

3. Carbohydrate Adjustment—as in breast milk, carbohydrate for the growing young is provided solely by lactose, and in Nature's own equilibrium of 60% beta, 40% alpha lactose.

4. Vitamin and Iron Adjustment—vitamins A, B_1, D, and iron are provided at recognized prophylactic levels, making their ingestion automatic and certain.

Needing only simple dilution with boiled water, Biolac assures a sterile formula—even including the carbohydrate. It is sold only in drug stores; no feeding directions are given to the laity.

- Please enclose professional card or letterhead when requesting literature or samples. The Borden Co., 350 Madison Avenue, New York City.

Borden's BIOLAC

A BORDEN PRESCRIPTION PRODUCT

COUNTY SOCIETY REPORTS

ALLEGHENY

Apr. 15, 1941

The regular scientific meeting was held in Mellon Institute Auditorium, Pittsburgh, at 9 p. m. Among the papers read was that on "Some Fundamentals in Fracture Repair," by Wilton H. Robinson, M.D., who said, in part:

The invitation of our program committee gives me an opportunity to speak on 3 or 4 topics, all of which are concerned with the subject of fracture treatment. The first of these concerns the changes in the circulation which result in the tearing down of the old bone at the fracture site and its replacement by new bone.

A new set of vessels and haversian canals is developed in the provisional callus; at first these are transverse; later by a process of anastomosis they become vertical as the normal structure of the bone is resumed.

I believe that most cases of delayed union and nonunion are due to interference in some way with the new circulation at the fracture site. This interference may be from 4 or possibly 5 causes. These are: (1) *Failure to place the bones in, at least, fair apposition.* This is more often the cause of viscous union rather than nonunion. (2) *Repeated trauma to the new capillary circulation by motion between the fragments.* Such motion may come about through inadequate splinting or too frequent dressings or ill-advised attempts to use physiotherapy. An outstanding example of the first of these is inadequate splinting of fractures of the forearm. The application of a short straight splint in forearm fractures is inadvisable. It is much safer to use an internal lateral splint to prevent any elbow motion that may cause a pull on the proximal fragments. (3) *The application of too tight or constricting bandages.* The fact (if it is a fact) that muscle, fat, and fascia are incompressible just as water is incompressible has not been accepted, but I believe nevertheless that it is true.

If this hypothesis is correct, swelling under a dressing that does not allow for expansion will close the arterial channels by hydrostatic pressure. Thus, a circular cast should be split to allow for expansion. If lateral splints are used, gauze bandages are preferable as they will stretch under expansion. Muslin bandages contract like a tent rope if wet. In applying splints with muslin bandages it is best to use a thin layer of padding over the part covered by the bandages, and great care should be taken not to have the upper edge of the bandage tighter than the lower. A spiral reverse should be used to prevent this. How often we see red circumferential streaks from the improper application of a bandage! (4) *Fibrous tissue between the fragments* prevents the completion of the capillary network across the fracture. For this, only open reduction is possible. (5) Bone disease—rarely retards repair and then only if there is destruction of bone at the site of fracture as, for instance, a gumma.

The second topic refers to physiotherapy. Physiotherapy is a useful adjunct in fracture treatment but should be used in moderation and always under the direction of the surgeon. Massage, whirlpool bath, interrupted faradic current by the Bristow coil, or the Martin Smart machine are the most useful. Radiant heat may be included, but I think the long or short wave diathermy had better be omitted. Physiotherapy should not be used in the early weeks of fracture repair as it may do more harm than good by disturbing the alignment of the fragments or by exerting an unfavorable influence on the new circulation in the provisional callus.

Some years ago I presented the plaster yoke for fractured clavicle to this society. I show it again tonight with the idea of stressing the fact that it should be so applied as not to "bunch up" over the external border of the pectoral muscles to cause a pressure sore. I would also like to invite attention to the flattening of the layers of plaster below the axillae. This effect is obtained by slipping the thumbs under the plaster while it is still soft and holding the edge between the thumb and fingers and pulling it directly downward. I would also like to make an additional claim for this dressing. In several of our cases of dislocation of the outer end of the clavicle it has given satisfactory results.

The final topic is out and out propaganda in favor of preparedness on the part of the general practitioner for the fractures that he will surely be called upon to treat. Why improvise splints that may or may not be adequate when for a very modest outlay you can carry a kit in the back of the car that will save you much trouble and anxiety. It should furnish supplies for almost any fracture except the femur. You see your fracture cases early, often before muscle spasm or swelling has taken place and when good reduction can be made without anesthesia. Why not carry a fracture kit in your motor car? For emergency use there should be some provision made to keep Thomas leg splints available for cases of fractured femurs. In New York City at least one Thomas splint is carried on each police patrol car.

Contents of Fracture Kit

(Arm—Hand—Ankle)

Essential

Laundry case (get at any department store).
6 Internal lateral wooden splints (assorted sizes).
6 Straight wood splints, yucca.
6 Six-inch plaster of paris bandages.
12 Three-inch gauze bandages.
6 Two-inch gauze bandages.
6 Three-inch muslin bandages.
Bessemer steel rod—bent to form a 1-inch U—⅛-inch stock.
Small wood saw.
Strong pliers with cutter.
No. 1 shirt knife.
6 Sheets of cotton batting.
Scissors.
Sterile gauze.

Optional

Merthiolate solution.
1 Can of ether.

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Special Facilities Provided For
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- Recreational Therapy
- Hydratherapy

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Fair Oaks Villa Sanitarium is a member of the American Hospital Association and Central Neuropsychiatric Hospital Association

1 Hypodermic needle with ampules of novocain.
Piece of felt.
1 Roll of adhesive.
Alcohol, etc.

Joseph A. Soffel, *Reporter.*

BERKS

Apr. 8, 1941

The regular monthly meeting was held in Medical Hall, Reading. Chester K. Kistler, president, introduced the guest speaker, Franklin L. Payne, associate professor of gynecology at the University of Pennsylvania, whose topic was "New Treatment for Menstrual Disorders" Dr. Payne said in part:

Excessive bleeding at puberty may be due to constitutional conditions, such as thyroid disease, purpura, anemia, acute infection, and environment; or to pelvic conditions, such as abnormalities of pregnancy, peritoneal infection, cervical polyps, erosions, and malignancy, especially sarcoma. In pelvic disease at puberty the vaginal examination should be done under anesthesia.

Important factors in the treatment of functional bleeding are (1) observation, (2) advice in hygiene, (3) uterine stimulants, (4) blood and blood vessel stimulants, (5) endocrine therapy, (6) curettement, (7) irradiation, and (8) surgical procedures. For uterine stimulants, ergot is preferred, but other drugs, such as pituitrin and stypticin may be used. For blood stimulants, especially in cases with vitamin C deficiency, ascorbic acid is prescribed; moccasin venom (1-3000) by hypodermic is effective in 75 to 80 per cent of the cases; transfusion of whole fresh blood is also recommended. Among the endocrines, thyroid (one-half to one grain per day of the desiccated gland) is best of all; pregnancy prolan is good in puberty but not later; others are estrogens, progesterone, equine gonadotropin, and the androgens, which are potent, but rather dangerous. Among the surgical procedures, there may be partial resection of the ovaries or hysterectomy.

The theories of causation of primary dysmenorrhea are (1) pelvic hypoplasia, (2) obstruction to egress of menstrual fluid, (3) psychogenic factors, (4) constitutional factors, and (5) endocrine factors.

In primary dysmenorrhea, the types of treatment recommended are: (1) medication, such as riona capsules, or a combination of aspirin, phenacetin, and codeine; atropine or syntropan may be prescribed, but no opiates; (2) endocrine; (3) constitutional; (4) psychic; and (5) surgical. In the endocrine therapy, thyroid is again preferred. Other endocrines, in their order of efficacy, are estrogen, progesterone, androgen, pregnancy prolan, equine gonadotropin, adrenalin, and insulin with glucose. Surgical procedures may consist of pelvic sympathectomy, which is effective in a high percentage of the cases. Pearl E. Hackman, *Reporter.*

LEHIGH

Apr. 8, 1941

The society had its regular monthly meeting at the Hotel Traylor, Allentown, at 8:30 p.m. George E. Pfahler, of Philadelphia, was the guest speaker. His topic, "What the General Practitioner Can Do to Prevent Cancer," was well presented. An abstract of it follows:

Dr. Pfahler expressed the opinion that the general practitioner can do more for the reduction of the death rate from cancer than is accomplished by expensive equipment, developed with the hope of successful treatment in advanced cancer. The equipment referred to is radium and the various types of x-ray equipment, including low voltage, high voltage, and super voltage, as well as the cyclotron, with which to make almost any substance radioactive.

Cancer does not begin as cancer but develops in some unhealthy or abnormal tissue which precedes the cancerous condition, as a hyperplasia, an atrophy, an ulceration, or a degeneration of some abnormal tissue. As the general practitioner can restore abnormal tissue to normal or eliminate it by means of surgery, electrocoagulation, or irradiation, he can prevent cancer.

Cancers of the skin can be prevented by following the above methods, also cancer of the lip and mouth.

There are 3 basic factors in the development of cancer: (1) an inherited susceptibility which may never become active unless the other 2 factors come into play; (2) an organ weakness or special susceptibility to hyperplasia, or atrophy, such as hypertrophic or atrophic gastritis; and (3) an extraneous agent such as is best illustrated by the various carcinogenic agents. These include all forms of chronic irritation. The rapid increase in cancer of the larynx and lungs during the past 10 or 15 years is very striking and seems to point definitely toward the effect caused by the inhalation of tobacco smoke, or in its carcinogenic form, the distillation from tobacco plus the inhalation of coal tar products resulting from the dust of combustion. These agents have been definitely proven to be carcinogenic.

There is always a stage of cancer when only the most careful microscopic examination can show the cancer. Therefore, when there is any doubt, a biopsy should be taken and an immediate microscopic study should be made; but when in doubt, the lesion should be treated as cancerous until proven otherwise. Delays while waiting for the microscopic report after biopsy often result in failure. Anna M. Ziegler, *Reporter.*

LUZERNE (HAZLETON BRANCH)

Apr. 9, 1941

A regular meeting was held at the Altamont Hotel, Hazleton, with President Joseph A. Alexis presiding. Following the business session Israel Bram, of Philadelphia, presented a most interesting lecture on "Medical Treatment of Thyroid Disease." Essentially, it included the following high points:

In thyroid disturbances, whether they be structural, functional, or both, the diagnosis must be made with caution; and in the event of apparent hypersecretion, we must rule out paroxysmal tachycardia, neurocirculatory asthenia, primary heart conditions, and malignant hypertension, to mention a few of the simulating conditions. The basal metabolic rate is not always dependable, since most of the diseases to be ruled out may themselves present an increased basal metabolic rate.

Hypothyroidism with or without goiter may vary in degree from mild subthyroidism to frank myxedema. In both hyperthyroidism and hypothyroidism, especially without goiter, the primary etiology may reside in the anterior pituitary.

Surgical goiter is a tumor mass, commonly an ade-

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., **23**, 201 (March), 1939.

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noma or cyst, which no medical treatment will remove. It is circumscribed and encapsulated, occasionally lobulated, resistant to the touch, and may vary greatly in size. Rarely do these occur in patients before the eighteenth year. A symptomless surgical goiter is a peril to health and life. These goiters may gravitate into the chest and give rise to cardiovascular and respiratory embarrassment, or they may undergo toxic or malignant changes.

The nonsurgical goiter becomes uniformly distended to several times its size and is neither a tumor nor encapsulated. Such swelling is due to colloid material from changes incident to adolescence or pregnancy, or it is the result of increased vascularity of hyperplasia characterizing exophthalmic goiter or Graves' disease.

Through procrastination or improper treatment to beyond the eighteenth year of life, a simple colloid goiter may undergo neoplastic changes requiring surgery; but timely medical treatment usually averts the need of thyroidectomy in the sporadic type occurring in almost all communities, usually seen in adolescent girls. The first need is the elimination of foci of infection as well as flaws in hygienic and dietetic habits.

Reduction of the size of the goiter is best effected by thyroid substance. Given under proper guidance for a few months, the swelling of the gland is soon replaced by the normal hollow of the neck. The patient should then be watched until adult life is established.

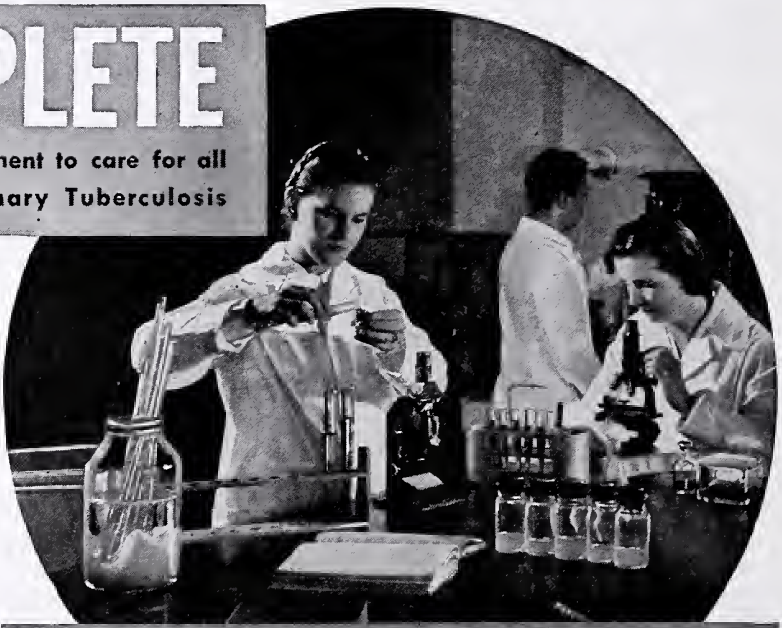
Graves' disease and toxic adenoma present points of difference both numerous and distinct. Toxic adenoma is a state of thyroid hypersecretion superimposed upon an old standing adenoma. Graves' disease is a general catabolic neuro-endocrine dysfunction. Toxic adenoma has a local etiology; it is the thyroid that makes the body sick. Graves' disease has a constitutional etiology; it is the body that makes the thyroid sick. Therefore, in the former, thyroidectomy should be considered, while in the latter condition the hyperplastic gland usually undergoes spontaneous involution if the bodily processes are properly corrected and managed.

Iodine and rest is not the most effective form of therapy for Graves' disease. By proper medical treatment we mean a broad régime of therapy including the elimination of discoverable infectious foci, an individually calculated rest program, and the application of dietetic, hygienic, medicinal, psychotherapeutic, and other measures, based on the clinical observation that treatment for exophthalmic goiter is not treatment for a lump on the neck.

It is a mistake to keep the average patient in bed indefinitely, as this increases introspection and excitability. The average patient may rest comfortably and feel more contented in an armchair a few hours a day. Insomnia should be managed with a well-selected remedy.

Aside from an early-to-bed program, patients with incipient Graves' disease need not discontinue customary daily tasks while under treatment. Advanced cases with marked cardiac enlargement and symptoms of impending or actual congestive heart failure demand absolute bed rest in combination with other measures in accordance with the requirements of the case. Following a satisfactory restoration of circulatory reserve, the rest program is relaxed.

Unless the patient is obese, he must virtually eat his way to health. Tea, coffee, condiments, and spices, as well as tobacco and alcoholic substances, must be strictly forbidden. For awhile the average emaciated patient may require twice the amount of food taken during health. As the goal is approached the food intake is tapered down, and when recovery is reached the patient is again placed on the normal food requirement.



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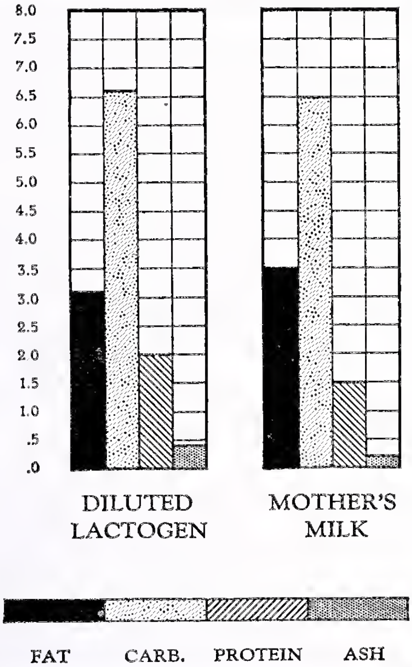

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The drugs useful in the average case are 5 in number—quinine, iodine, eserine (physostigmine), the barbiturates, and insulin. Usually 2 or 3 of these drugs suffice to fulfill the indications in a given patient. The facts to be remembered are the following: Approximately 90.5 per cent of cases of Graves' disease present a relative immunity to cinchonism; iodine is too often abused and in case of doubt it is best to omit this drug; eserine, in the absence of diarrhea, is a drug the usefulness of which is often overlooked; the barbiturates stand foremost as sedatives. Insulin, cautiously employed, is a potent weapon in combating carbohydrate intolerance and undernutrition which so commonly determine the course and prognosis of the case on hand. Treatment may be discontinued within 3 or 4 months after the second or third normal basal metabolic rate taken at intervals of a month.

There is general admission that unless the patient is managed as a whole therapeutically, no form of treatment succeeds in its purpose. This applies to psychotherapy. The study of the cause and cure of Graves' disease is concerned with the entire neuro-endocrine system. These patients must be trained to face the struggle for existence with confidence and imperturbability. An increase in the threshold of emotional reaction—the substitution of reason for emotionalism—this is the aim of effective psychotherapy.

The course of clinical events in the average case of Graves' disease while under appropriate medical attention is as follows: The tachycardia is the first symptom to benefit. Parallel with heart improvement, the weight progresses toward the normal figure. The thyroid hyperplasia gives way to colloid infiltration, and may so remain until after normality in all other directions has been established. At this time there is a gradual lessening of colloid substance with reduction of the size of the thyroid. In due time the swelling disappears entirely. The tremor also disappears with normality of heart and metabolic rates. The exophthalmos is commonly the last to go, although there are exceptions to the rule. In those whose exophthalmos is excessive, the eyes may still bulge for a few months or even a year or longer after the individual as a whole has recovered. But sooner or later in nearly all cases the eyes become normal, and the appearance of frozen fright becomes a past event.

Thus, the discharged patient taught how to eat, how to sleep, how to work, how to play, how to laugh, and even how to think, does not relapse. He enjoys health in its fullest degree and is capable of meeting life's problems with greater intelligence and poise than ever before.

Nathan Sussman, *Reporter.*

LYCOMING

Apr. 11, 1941

The regular monthly meeting was held in Medical Hall, Williamsport. The society was honored by the presence of Hobart A. Reimann, Magee professor of medicine, Jefferson Medical College, who spoke on "Undulant Fever."

He said that this disease is a rarity in Philadelphia; in fact, it is difficult to find a case for student presentation. Although known for many years, it has become widely recognized on a large scale in this country only since 1904, and seems to be most prevalent in the cattle-raising areas of the United States.

The chief sources of infection are milk, butter, ice cream, cheese, and custards, milk being an especially prevalent source. Where this disease is spread from

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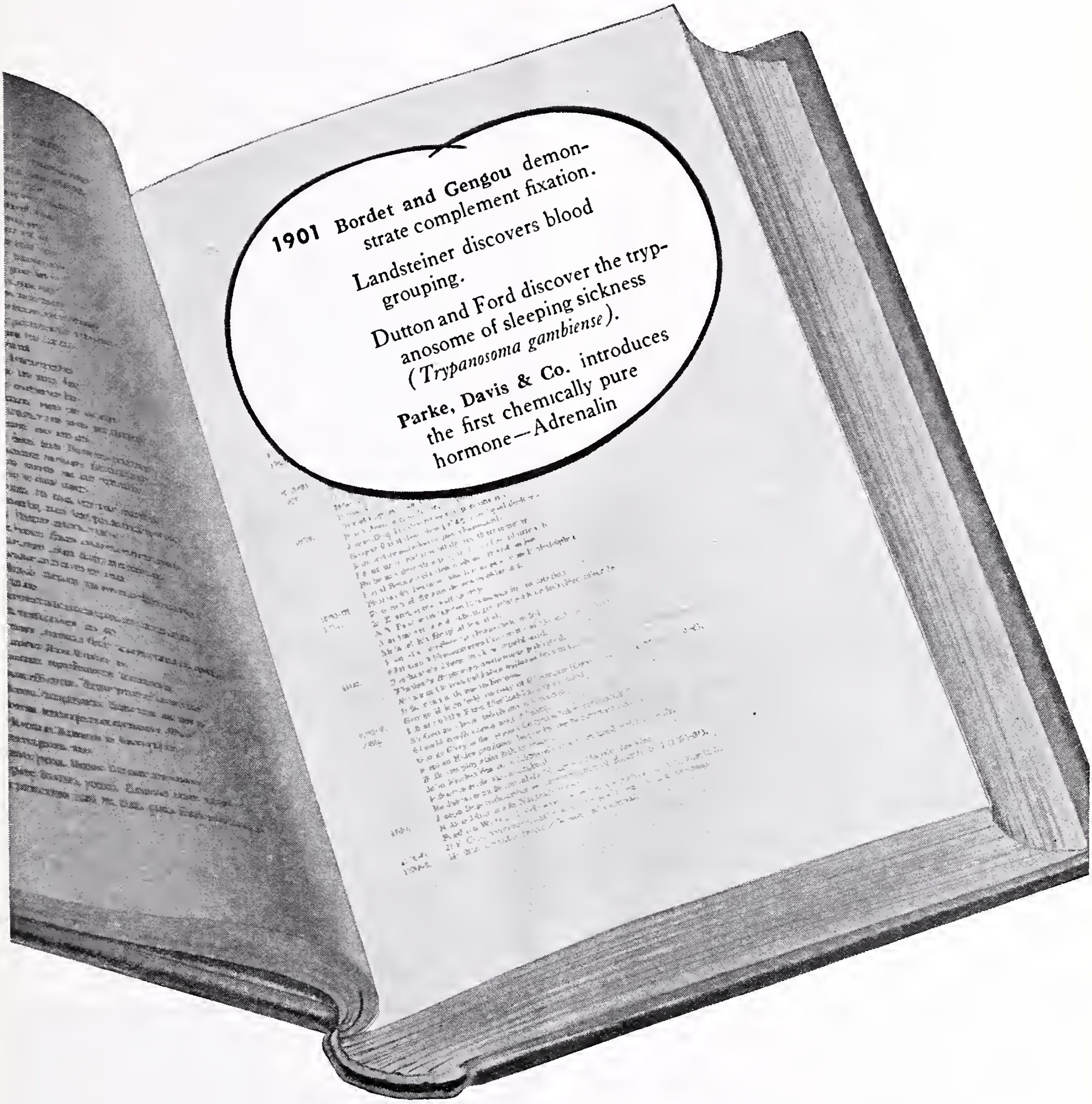

1901 Bordet and Gengou demonstrate complement fixation.

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milk, legislation should be passed providing for the pasteurization of all milk. It is estimated that 20 to 80 per cent of all animals are infected with Bacillus abortus.

The disease can be defined in 3 phases—the mild or latent, ambulatory or clinical, and the moderately severe. Most important in the diagnosis is the patient's history as to occupation and diet. The incubation period may be from weeks to months. Although skin tests are very helpful, a positive blood culture is conclusive evidence.

Treatment of undulant fever is most unsatisfactory. The first treatment is symptomatic. Nutritious diets, well balanced with vitamins, are the chief object of treatment. In reference to chemotherapy, opinions seem to be equally divided on the use of sulfanilamide groups.

Following Dr. Reimann's splendid presentation of this subject, the discussion was opened by Merl G. Colvin, pathological director of the Williamsport Hospital, who cited many interesting cases, as undulant fever is rather prevalent in Lycoming County. Dr. Reimann's paper was also discussed by Carl E. Ervin, of Harrisburg, and J. Moore Campbell, of the Pennsylvania Department of Health.

LOUIS E. AUDET, *Reporter.*

WARREN

Apr. 21, 1941

The society met at the Conewango Club, Warren, and enjoyed the privilege of viewing an instructive motion picture which photographed the various types of movements, tremors, tics, etc., as found in 60 patients suffering from both functional and organic nervous diseases.

The symptoms of encephalitis or brain tumor may be present in hysteria and may be difficult to differentiate. Conversion hysteria, the speaker said, is a major hysteria. We do not know the causes which produce these motor disturbances after emotional upsets. An understanding physician, patient and willing to listen to the story of the neurotic, after a time may find that all symptoms will disappear. On the contrary, the lesions of organic disease grow worse unless remedied by surgery.

Abraham M. Ornsteen, assistant professor of neurology at the University of Pennsylvania School of Medicine, prepared the film and was invited to Warren by the Warren State Hospital medical staff, who also acted as hosts at the steak dinner which followed the program. Thirty-seven members were present.

MICHAEL V. BALL, *Reporter.*

WASHINGTON

Feb. 12, 1941

The meeting was held in the Blue Room of the George Washington Hotel, Washington. Eleven members and one visitor sat down to the pre-meeting get-together dinner. The visitor was Clarence R. Phillips, of the State Tuberculosis Clinic at Harrisburg.

The meeting, presided over by President George L. McKee, convened at 8:15 o'clock. Thirty-five members were present. The scheduled speaker being confined to his bed by illness, Dr. Phillips, a former trustee of The Medical Society of the State of Pennsylvania, consented to speak and addressed the meeting for 15 minutes on "The History of Medicine."

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By action of the Board of Trustees, the following were elected to membership in the society: Roy S. Clark, Washington; William A. Prideaux and Harry S. Hutchison, Claysville; and Joseph Klimowski, California.

Mar. 12, 1941

For this meeting the members of the society were the guests, at Washington and Jefferson College, Washington, of the Phi Sigma honorary biological society of that institution. In the absence of President McKee, the meeting was presided over by President-elect Clyde E. Tibbens. Twenty-one members were present.

Francis E. Downey, Bentleyville, was elected to membership in the society by action of the Board of Trustees.

The chairman introduced President Joseph Hufschmidt of Phi Sigma; he in turn introduced the speaker, Lawrance E. Shinn, Ph.D., of the Institute of Pathology of the Western Pennsylvania Hospital, Pittsburgh, who spoke on "The Mode of Action of the Sulfonamide Drugs." Dr. Shinn said, in part:

The mechanism of action of the sulfonamide drugs cannot be said to be fully explained at the present time. Nevertheless, interesting and suggestive facts and theories are available which throw definite light on the problem and it is with one of these developed at the Western Pennsylvania Hospital that the speaker wishes to deal.

Certain known and accepted facts regarding the behavior of the sulfonamides can be taken as a satisfactory starting point.

1. These drugs act in comparable concentration both *in vivo* and *in vitro.*
2. Their action is bacteriostatic, rather than bactericidal, and *in vivo* must be completed by the defense mechanisms of the host.
3. Their action, *in vivo* and *in vitro,* is preceded by a lag period during which no activity is manifested.
4. They are particularly effective against the hemolytic streptococcus and the pneumococcus.

Can we then construct a general theory to fit these facts?

We can deduce from fact (1) that the action is directly against the micro-organism and requires no significant mediation by the host.

From fact (2) we suspect that we are dealing with some equilibrium of forces. That is to say that inasmuch as the effect is a restriction rather than a termination of bacterial growth, it must be self-limiting. This state of affairs can be most readily produced by assuming a cyclic system in which the sulfonamide promotes the accumulation of some toxic product of bacterial metabolism which would normally be disposed of. Since such a product would act to restrict growth, it would as a result restrict its own production, so that a self-limiting state would be set up, i. e., *a bacteriostatic but not a bactericidal condition.*

From fact (3) we derive both a confirmation of the above equilibrium concept, since time is necessary for such accumulation, and we further provide for possible necessary intermediate transformations of the drug.

Then the situation becomes:

> Cell growth produces a toxic substance (X) which is normally removed by some natural process (R) which is in some way interfered with (Y) by the sulfonamide. The problem is to determine X, R, and Y.

From fact (4) we are led to suspect X to be hydrogen peroxide, which is a substance produced in toxic amounts by these organisms and which is normally removed by the enzyme catalase. If this is correct, then cultures of the pneumococcus undergoing bacteriostasis by sulfonamides should show measurable increase in peroxide content. This is found to be true experimentally, for under such conditions about 5 times the normal peroxide content per unit number of bacterial cells can be demonstrated. Inactive sulfonamide compounds do not produce this result.

If catalase represents R, then we would suspect that sulfanilamide must act to inhibit catalase. This is a well-known property possessed by a number of substances. Sulfanilamide does not inhibit catalase. However, the para-amino group of sulfanilamide, which has been shown to be the essential point of activity in all the sulfonamide drugs, can be easily oxidized to a very potent catalase inhibitor. This intermediate is very likely the hydroxylamino derivative. Since the bacterial cell could readily effect this transformation, the assumption is not unreasonable. Furthermore, the hydroxylamino derivative is far more active against bacteria than is sulfanilamide, and acts with a diminished period of lag.

Hence, we can now write:

> Cell growth produces hydrogen peroxide, which is toxic and normally removed by catalase. Sulfanilamide exerts its activity by being converted to an active form which inhibits catalase and hence permits a state of auto-intoxication of the bacterial cell.

These steps *all* take place *at* the bacterial cell and for this reason it is not necessary to assume inactivation of all the catalase of the host. In fact, such a process would be fatal to the host. *It is for this reason that we do not attempt to treat with a preformed active intermediate compound, but rather prefer to use such a one as the normal sulfonamide drug, which is inactive in itself and only becomes active at the bacterial cell.*

Apr. 9, 1941

Sixteen members were present. The meeting was held in the Oval Room of the George Washington Hotel, Washington, and was presided over by President McKee. Zoe Allison Johnston, of Pittsburgh, was present and was given the privilege of the floor. She told of the organization and plans of the Women's Field Army of the American Society for the Control of Cancer.

As this was the semi-annual business meeting, there was no scientific program. The financial report of *The Medical Program,* bulletin of this society, was read, and the society voted to continue the publication under the same auspices.

James H. Corwin was elected to succeed himself as delegate from this society to The Medical Society of the State of Pennsylvania.

Robert W. Dunlap, *Reporter.*

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THE WOMAN'S AUXILIARY

MRS. GEORGE C. YEAGER, *Editor*
1419 E. Susquehanna Avenue
Philadelphia, Pa.

EDITOR'S NOTE

We wish to express our sincere regret at the passing of Dr. Frank C. Hammond, former editor of THE PENNSYLVANIA MEDICAL JOURNAL, who was such a good friend of our auxiliary throughout its existence, and to extend our heartfelt sympathy to Mrs. Hammond.

JESSIE W. (MRS. GEORGE C.) YEAGER,
Chairman of Publicity.

PRESIDENT'S LETTER

DEAR FRIENDS:

This is the month when most of the auxiliaries are closing their year's work. The reports which came to me on Apr. 1 were very gratifying and showed a definite interest in our various activities. I have appreciated the promptness with which these reports were sent. It means a great deal to receive that co-operation. Other reports will be requested during these early summer months and I trust you will give them the same prompt consideration.

I hope that the president of each auxiliary will be present to read her report at the convention in Pittsburgh. I want each auxiliary represented and I hope that a large group of delegates will attend. We can make this an outstanding convention if the auxiliary members will attend in large numbers.

As I have visited the auxiliaries throughout the state this spring, I have been impressed with the many problems which are being presented because of so many young physicians being called to the camps. It is evident that the active membership in both the auxiliaries and the county medical societies will be affected. Each auxiliary will have to solve this problem according to its own desires, but it is hoped that each name can be kept on an associate or honorary list. The auxiliaries whose memberships are small will feel this burden more than the larger ones. However, the desire to continue friendly relations is paramount, even though some of the activities may have to be reduced. We who remain at home must recognize the importance of continuing an active organization. This will test our loyalty and prove our faithfulness.

Sincerely yours,
MARY E. (MRS. MAXWELL) LICK,
President.

COUNTY AUXILIARY REPORTS

Delaware.—On Apr. 10 we held our regular monthly meeting in the solarium of the Chester Hospital where, after a routine business meeting, we were entertained with a review of Lella Warren's book, *The Foundation Stone,* given by Mrs. William T. Galey.

A small but successful card party was held on the evening of Apr. 23 at the home of Mrs. Ralph E. Bell in Media, the proceeds going to our general fund. All present reported a very enjoyable evening.

Franklin.—The regular meeting of the auxiliary was held on Mar. 18 in the parlor of the Central Presbyterian Church, Chambersburg. Mrs. Ira M. Henderson, of Fairfield, the president, presided. The chairman of each committee made a report. The president then called on Miss Jeanne Senseney to introduce the speaker of the afternoon, Dr. Cecilia V. Sargent, professor of Spanish at Wilson College, who talked on "Hispanic America: Neighbors." Her talk was both interesting and instructive; an outline follows:

1. Good Neighbor Policy calls our attention to Hispanic America.

2. Common destiny: recipients of Anglo-Saxon and Hispanic versions of European culture; codefenders in the New World of that culture now at stake in the Old World.

3. Need to face frankly factors which have hitherto been obstacles to co-operation.

a. "Black Legend," of long standing but essentially unauthentic, which exaggerates Spanish traits and alienates our sympathies.

b. Questionable theory of the inferiority of mixed races.

c. The so-called republics do not meet our standards of democracy, for dictatorships prevail, and there are frequent revolutions; but democracy is still in a state of evolution, because of the (1) absence of democratic traditions in Spain, (2) lack of experience in their colonial life, and (3) vicissitudes in their early history as independent nations.

d. Tracing of events, policies, and interpretations of the Monroe Doctrine which bred in Latin Americans a distrust of Yankee imperialism.

e. Tracing of shift from Big Stick, Dollar Diplomacy, and Status Quo to Good-Neighbor Policy.

4. Growth of good-will in Pan-American conferences of 1934, 1936, and 1938.

5. Continental co-operation in present World War crisis.

6. Aim of continental co-operation in trade and economic adjustments within the hemisphere.

7. United States interpreted to Hispanic America through outstanding individuals: Theodore Roosevelt, Franklin D. Roosevelt, and Cordell Hull.

8. "To be effective, Pan-Americanism must be part of the fundamental attitude of the average American citizen."

At the close of the meeting a social hour was enjoyed. The following were the hostesses: Mrs. Ambrose W. Thrush, Mrs. Stewart W. Dittmar, Mrs. Lewis H. Seaton, Miss Jeanne Senseney, Mrs. James H. Swan, and Mrs. David C. Pewterbaugh.

Lackawanna.—On Apr. 24 Mlle. Eve Curie, distinguished daughter of the world famous scientist, Madame Marie Curie, lectured on "The Magic of Radium" at the Central High School Auditorium in Scranton. The honor and pleasure of bringing this internationally famous person to Scranton belongs to the Lackawanna County Medical Auxiliary and the Scranton Branch of the American Association of University Women. A small reception followed in Mlle. Curie's honor at the home of Mrs. Harold A. Scragg. Proceeds of the lecture were applied to the Medical Benevolence Fund and the National Fellowship Fund of the A. A. U. W. We feel that it is not out of place to mention that Mlle. Curie justified in every way the splendid publicity she has received throughout the country on her third lecture tour, and presented her subject brilliantly and entertainingly to a capacity audience.

On Apr. 8 a regular monthly meeting was held in the Chamber of Commerce Lounge, Scranton. Mrs. Ernest L. Kiesel, Mrs. Harry M. Kraemer, and Mrs. Daniel E. Berney were named as a nominating committee to report at the May meeting. Mrs. Louis A. Milkman, president, presided. Mrs. Malcolm Oettinger, mental hygiene consultant of the Visiting Nurses Association, spoke on "The Psychologic Effect of Illness on Children."

Lehigh.—On Tuesday afternoon, Apr. 8, the annual health program and reciprocity tea was held at the Woman's Clubhouse, Allentown. The affair was attended by 200 members, guests, and representatives of 50 leading women's organizations in Allentown and Lehigh county.

The speaker, Gilson Colby Engel, M.D., of Philadelphia, was presented by Mrs. Paul W. Ramer, chairman of public relations, who with the assistance of Mrs. Frederick R. Bausch, Sr., arranged for the health program. Dr. Engel told the women what they should know about cancer and declared that it is curable if it is brought to the attention of the doctor early enough. He advocated an examination every 6 months, or at least once a year, for women of 35 years or more. He told of the research being done in this field and named the weapons being used to combat the disease. After his talk he answered questions from the audience.

Mrs. Elmer H. Bausch, the president, greeted the gathering and after the program a reciprocity tea was

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held, arranged by the hospitality committee, of which Mrs. John H. Hennemuth is chairman. Mrs. S. Weston, Mrs. Frederick R. Bausch, Sr., Mrs. William A. Hausman, Jr., and Mrs. Annie Longacre presided at the tea tables.

Before the program, a musical prelude was provided by Matt Gillespie, of Catasauqua, who entertained with piano numbers, and during the tea Mr. Gillespie and Jack Kline of Bethlehem, violinist, gave a beautiful background of music to the affair. Mrs. Joseph R. Bierman, music chairman, arranged for the musical portion of the program.

Lycoming.—The meeting of the auxiliary was held on Mar. 14 at the Woman's Club, Williamsport. Luncheon at 1 o'clock preceded the session at which Mrs. Herman Finkelstein, president, presided. A letter from England citing the need for surgical instruments was read, and Mrs. J. Stanley Smith and Mrs. Carl H. Senn were appointed as a committee to attempt to procure these needed instruments.

A letter of acknowledgment was read by Mrs. Senn, treasurer, for the sterilizer recently bought by the auxiliary for the Williamsport Hospital, also another letter of appreciation for $250 received for the Medical Benevolence Fund. Both gifts were made possible through proceeds received from the Medical Auxiliary Ball. A sum of $5 was donated for the local Salvation Army youth project.

Mrs. George N. Ballentine and Mrs. Allen J. Hannen were accepted as new members.

The executive board of the auxiliary met at the Village Tea Room on Apr. 13 at 1 p. m. The meeting, called by the president, was preceded by a luncheon.

Final plans were made for the next regular meeting to be held at the Woman's Club on Apr. 25, at which time the president of the State Auxiliary, Mrs. Maxwell Lick, of Erie, was expected to be present. The president urged that all members make a special effort to attend.

Mrs. J. Louis Mansuy, councilor, was also present and outlined the program for the Seventh Councilor District meeting to be held in Williamsport on May 9 at the Lycoming Hotel.

Mifflin.—The auxiliary held a luncheon meeting at Green Gables Hotel, Lewistown, Apr. 22, in honor of its special guests, Mrs. Maxwell Lick, president of the State Auxiliary, and Mrs. Walter Orthner, councilor of the Sixth District. The luncheon arranged by Mrs. George R. Barnett, chairman of the social committee for April, and her able assistants was much enjoyed by all. The tables were beautiful in their spring colors and decorations. The bright sunshine of the afternoon and the newly opened buds of early spring seemed to breathe a happy welcome to our honored guests.

At the business meeting which followed, reports for the year were made by the chairmen of the various committees. Mrs. George R. Barnett, *Hygeia* chairman, reported that 26 subscriptions had been secured and several magazine subscriptions had been given to schools in surrounding districts as well as in the Lewistown schools.

Mrs. A. Reid Leopold, president of the auxiliary, introduced Mrs. Walter Orthner, who spoke words of greeting and then introduced Mrs. Maxwell Lick, who gave a very inspiring message on our duties and privileges as doctors' wives. She also urged our attendance at the state convention and told us of the importance of the Medical Benevolence Fund.

After the meeting an enjoyable time was had playing bridge.

Philadelphia.—On Apr. 8 the auxiliary held its Eleventh Annual Health Institute, one of the most important events of the year. Various clubs and organizations were represented at both morning and afternoon sessions.

The speakers were Francis F. Borzell, M.D., president of the State Medical Society; Maj. James B. Mason, unit instructor of the Medical Reserve Corps, U. S. Army; Capt. John B. Kaufman, district medical officer, Fourth Naval District, U. S. Navy; Malcolm W. Miller, M.D., allergist at the Lankenau Hospital, Philadelphia; Mrs. Maxwell Lick, president of the State Auxiliary; Leon H. Collins, Jr., M.D., chairman of the Pneumonia Control Committee of the Philadelphia County Medical Society; Edward A. Strecker, M.D., consultant at the Pennsylvania Hospital, Philadelphia; and Edward L. Bortz, M.D., president of the

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Philadelphia County Medical Society. These speakers were all introduced by prominent physicians.

A well-deserved tribute was paid to Mrs. Wilmer Krusen, the founder of the Health Institute. It was she who conceived the idea and put it into practice. Not only was the plan adopted by the auxiliaries in this state but it has now reached the Pacific Coast. Mrs. Krusen was unanimously elected an honorary member of our auxiliary and presented with a bouquet of flowers.

The theme of our Eleventh Health Institute was "Medicine and the National Crisis" and was prepared by Dr. Edward L. Bortz.

A luncheon was served between the morning and afternoon sessions.

On Apr. 23 the *Hygeia* committee had a demonstration on lighting at the Architects' Building, Philadelphia, and a motion picture presented by Ella Wistar Haines. The result was very gratifying.

On Apr. 30 we enjoyed our spring outing to Washington and the Sky Line Drive, with luncheon at Front Royal, Va., and dinner at the Mayflower Hotel, Washington. It was a beautiful day and a wonderful trip, arranged by our capable chairman, Mrs. John B. Lownes.

Our Red Cross unit meets every Tuesday and Friday from 10 a. m. to 4 p. m.

Schuylkill.—The April meeting of the auxiliary was given over to the annual Health Institute held in the Necho Allen Hotel, Pottsville, on Apr. 8. This was the sixth institute given by the Schuylkill Auxiliary and Stanley P. Reimann, M.D., Philadelphia, pioneer in the field of cancer, was the principal speaker.

At the conclusion of Dr. Reimann's talk, questions were asked by the audience, after which a motion picture, "Choose to Live," was given, the film showing pathologists at work on a patient. A second film on the fight on tuberculosis and the treatment of the disease was intelligently explained by Wilton R. Glenney, M.D., Pottsville, and the third picture on syphilis entitled "With These Weapons" was then shown. J. William Jones, M.D., roentgenologist at the Pottsville Hospital, had charge of the motion picture camera.

The institute was opened by Mrs. Charles V. Hogan, president of the auxiliary, who welcomed the guests, after which greetings were extended by the medical society president, Peter B. Mulligan, M.D., Ashland.

Mrs. J. William Jones was chairman of the institute, which proved to be one of the most successful both in attendance and educationally of any held thus far. April being the month set aside to fight cancer, the institute was conducted in co-operation with the Women's Field Army. Approximately 200 men and women were present.

Westmoreland.—The auxiliary held its regular meeting in the Blue Room of the Jacktown Hotel, Greensburg, Apr. 1, with luncheon served to 40 members.

Mrs. Paul G. McKelvey, president, presided at the business meeting. Through the efforts of the *Hygeia* committee, headed by Mrs. Irwin J. Ober, the auxiliary achieved third place in the national *Hygeia* contest. Mrs. Charles C. Crouse announced that the children's plays were again successful and would be presented next year.

Mrs. James M. Mayhew announced May 6 as the date for the Health Institute in the First Presbyterian Church of Greensburg. The speaker was to be William W. Bauer, M.D., of Chicago, who is director of the A. M. A. Bureau of Health Education. This affair was to be open to the public.

The business meeting was followed by bridge. Hostesses for the meeting included the flower committee with Mrs. Howard J. Thomas as chairman.

SEEING TUBERCULOSIS THROUGH

A good x-ray is your doctor's best aid in discovering early tuberculosis. This theme is being placed before the people of Pennsylvania by the voluntary tuberculosis organizations in their annual educational campaign to promote the early diagnosis of cases of tuberculosis. The National Tuberculosis Association sponsors this campaign for the country, and in this state it is carried on by the Pennsylvania Tuberculosis Society and its affiliated organizations.

Since its discovery 46 years ago, the x-ray—one of the greatest scientific marvels—has been accepted as part of the equipment of our complex civilization. Most children grow up to accept it as they do pasteurized milk or spinach.

The x-ray serves mankind in numerous ways, but its greatest contribution is to medicine. The physician today can hardly picture the practice of medicine without the ever helpful assistance of the roentgenogram. It enables us to see the enemy, disease, even behind the walls of the body and trace it to its most secret haunts. The damaged lung, the fractured bone, the unsuspected tumor cannot hide from the roentgen ray.

Notwithstanding the modern weapons available in the tuberculin test and the x-ray, the tuberculosis death rate is much higher than it should be, much higher than it needs to be.

"Seeing through" tuberculosis is an important part of the task today. There are 3 phases of "seeing through" tuberculosis and all are necessary to attain ultimate victory—the social, as a community problem; the individual, as a patient's problem; and the medical, as a physician's problem.

When these steps and our knowledge are put to work everywhere, "seeing through" tuberculosis will end in "seeing tuberculosis through."

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MEDICAL NEWS

Births

To Dr. and Mrs. Henry F. Hottenstein, of Millersburg, a son, May 12.

To Dr. and Mrs. Samuel O. Curry, of Camp Hill, a son, Samuel Curry, Jr., Mar. 27.

Engagements

Miss Kathleen Appleby and Carl C. Hoffman, M.D., both of Harrisburg.

Miss Laura Elizabeth Fitch, of Philadelphia, and Carl F. Geigle, M.D., of Erie.

Miss Allie Brown Rendleman, of Pottstown, and James Byron Carty, M.D., of Philadelphia.

Miss Doris Bishop, daughter of Dr. and Mrs. Aaron L. Bishop, of Philadelphia, and Dr. Alan Kannopel, of Palmerton.

Miss Marybeth Gotwals, of Norristown, and Dr. Kenneth du Dois Ervin, son of Dr. and Mrs. John H. Ervin, of Jenkintown.

Miss Lucretia Greene Fleitas, daughter of Dr. and Mrs. Joseph Fleitas, of Philadelphia, and Mr. Robert Forsythe Irwin, 3d, of Germantown.

Marriages

Miss Doris Marie Severine to Mr. J. Frank Akers, son of Dr. and Mrs. Andrew F. Akers, all of Harrisburg, Apr. 19.

Miss Elizabeth Craig Wallace, daughter of Dr. and Mrs. James O. Wallace, of Pittsburgh, to Mr. Thomas George Greig, Jr., son of Mrs. Thomas G. Greig and the late Dr. Greig, of Pittsburgh, May 17.

Deaths

○ *Indicates membership in county medical society, The Medical Society of the State of Pennsylvania, and the American Medical Association.*

○ **George W. Conrad,** Johnstown; Eclectic Medical College, Cincinnati, Ohio, 1905; aged 61; died on Apr. 6.

○ **Thomas A. Irwin,** Franklin; Chicago Homeopathic Medical School, 1888; aged 79; died on Dec. 4, 1940.

○ **John M. Dumm,** Mackeyville; University of Pennsylvania School of Medicine, 1878; aged 88; died on Mar. 8.

○ **Leroy K. Leslie,** Bareville; Jefferson Medical College of Philadelphia, 1889; aged 80; died on Feb. 22.

○ **Lawrence H. Fitzgerald,** Reading; University of Pennsylvania School of Medicine, 1917; aged 46; died recently. Dr. Fitzgerald was a Fellow of the A. M. A.

○ **Edgar A. McCombs,** Connellsville; University of Louisville School of Medicine, 1907; aged 59; died on Dec. 17, 1940. Dr. McCombs was a Fellow of the A. M. A.

○ **Arthur Newlin,** Philadelphia; University of Pennsylvania School of Medicine, 1899; aged 67; died Apr. 13. Dr. Newlin served as a major during World War I. He was a Fellow of the A. M. A. He is survived by his wife, a son, and 3 daughters.

○ **Joseph P. Ball,** Philadelphia; Medico-Chirurgical College of Philadelphia, 1898; aged 76; died on Apr. 15 following a long illness. Dr. Ball was one of the founders and for many years a consulting physician on the staff of Frankford Hospital. He is survived by a sister and 2 brothers.

○ **Oren B. Richards,** Moosic; University of Rochester School of Medicine and Dentistry, 1935; aged 30; died on Mar. 30. Dr. Richards was a Fellow of the A. M. A., and at the time of his death was captain of the Medical Detachment of the 109th Field Artillery and assistant regimental surgeon at Indiantown Gap.

○ **James H. Baldwin,** Philadelphia; University of Pennsylvania School of Medicine, 1900; aged 69, died on Apr. 18. Dr. Baldwin was a captain in the Medical Corps during World War I, being chief surgeon at Embarkation Hospital No. 1, Hoboken, N. J. He was a Fellow of the American College of Surgeons and served as chairman of the Section on Surgery of The Medical Society of the State of Pennsylvania in 1926. He was a former president of the Ohio Society of Pennsylvania. Dr. Baldwin is survived by his widow, a son, and a daughter.

Miscellaneous

T. Lyle Hazlett, M.D., of Pittsburgh, was made president of the American Association of Industrial Physicians and Surgeons at its recent convention in Pittsburgh.

The Bryn Mawr Hospital will receive $10,000 from the estate of the late Emily Chapman Philler, of Haverford, under the terms of her will which was probated recently.

Russell S. Boles, M.D., of Philadelphia, was elected president of the American Gastro-Enterological Association during its recent convention in Atlantic City, N. J.

Herbert T. Kelly, M.D., of Philadelphia, chairman of the State Society's Committee on Nutrition, presented a paper on "The Newer Knowledge of Nutrition with Special Reference to Nutritional Deficiency" before the members of the Lehigh County Medical Society at Allentown, on Mar. 11.

Ella Roberts, M.D., assistant instructor in medicine at the University of Pennsylvania School of Medicine, has been made medical director of the Children's Heart Hospital, Falls Road, West Philadelphia. She succeeds Oswald F. Hedley, M.D., who served as acting director while conducting a study of rheumatic fever in Philadelphia for the U. S. Public Health Service.

Rufus S. Reeves, M.D., of Philadelphia, was presented on May 2 with the eighteenth annual Strittmatter Award, founded by the late Dr. I. P. Strittmatter for donation to the physician who makes the most valuable contribution of the year in Philadelphia to the healing arts. Dr. Reeves, who has been in charge of the very popular postgraduate institutes of the Philadelphia County Medical Society for 6 years, was given the award, consisting of a gold medal and a scroll, in ceremonies held at the society's headquarters at 21st and Spruce Streets.

The Illinois State Department of Public Health and the Children's Bureau, U. S. Department of Labor, are sponsoring ten 4-week courses in obstetrics at the Chicago Lying-in Hospital during the fiscal year 1941-

1942. Only a limited number of physicians will be accepted for each course. The only cost to the individual is for room and board and $25, of which $10 is refunded at the completion of the course. Applications and inquiries should be addressed to: Postgraduate Course, Department of Obstetrics and Gynecology, 5848 Drexel Ave., Chicago, Ill.

The seventy-sixth semi-annual meeting of the Association of Trustees and Medical Superintendents of Pennsylvania State and Incorporated Hospitals for Mental Diseases and Defects was held on May 23, at the Elwyn Training School, Elwyn.

Mesrop A. Tarumianz, M.D., of Farnhurst, Del., presented a paper entitled "Delaware's Program for Mental Hygiene," which was discussed by Arthur A. Pierce, M.D., and Camilla M. Anderson, M.D., both of Philadelphia. "Immunization Program at Elwyn" was the title of the paper read by Joseph E. Nowrey, M.D., of Elwyn. This paper was discussed by Leroy Wenger, M.D., of Glenolden, and Gale H. Walker, M.D., of Polk.

The midyear meeting of the Pennsylvania Psychiatric Society was held at the Allentown State Hospital, Allentown, on Apr. 10. Members of the society were guests of the Allentown State Hospital and Henry I. Klopp, M.D., superintendent, during the day and at a buffet supper.

The following physicians participated in the program: Harry F. Hoffman, Max Rossman, Henry I. Klopp, Ethel Friedman Buchman, Joseph Hughes, Joseph C. Yaskin, Joseph A. Cammarata, Paul Holmer, Robert H. Israel, and Gerald H. J. Pearson.

The officers of the society are: President, Henry I. Klopp, M.D., Allentown; president-elect, Baldwin L. Keyes, M.D., Philadelphia; and secretary-treasurer, LeRoy M. A. Maeder, M.D., Philadelphia.

Charlotte Silverman, M.D., graduate of the Woman's Medical College of Pennsylvania in 1938, has been awarded a fellowship by the American Association of University Women entitling her to a year's study in public health, which she will take in the College of Physicians and Surgeons, New York City.

Among recent lecturers at the Woman's Medical College were Elise L'Esperance, M.D., of the Strang Memorial Cancer Clinic, New York, whose topic was "The Treatment of Cancer of the Body of the Uterus"; Sara M. Jordan, M.D., of the Lahey Clinic, Boston, who spoke on "Peptic Ulcer"; and Walter C. Alvarez, M.D., of the Mayo Clinic, Rochester, Minn., who lectured under the auspices of the Woman's Medical College Chapter of Alpha Omega Alpha on "The Art of Medicine."

The Graduate Fortnight of the New York Academy of Medicine will be held from Oct. 13 to 24, 1941. The purpose of the fortnight is to make a complete and authoritative presentation of a subject of outstanding importance in the practice of medicine and surgery. The subject this year is "Cardiovascular Diseases Including Hypertension."

The fortnight will present a carefully integrated program which will include morning panel discussions, afternoon clinics and clinical demonstrations at hospitals of New York City, evening addresses, and a scientific exhibit. The evening sessions at the academy will be addressed by recognized authorities from leading medical centers of the United States and Canada. The comprehensive exhibit will include books and roentgenograms; pathologic and research material; clinical, laboratory, diagnostic, and therapeutic methods. There will be demonstrations of exhibits and of fresh pathology.

A complete program and registration blank may be

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secured by addressing Mahlon Ashford, M.D., The New York Academy of Medicine, 2 East 103d Street, New York, N. Y.

THE PENNSYLVANIA TUBERCULOSIS SOCIETY held its forty-ninth annual meeting and conference at Erie on Apr. 16 and 17.

The sessions on Apr. 16 were devoted to the Christmas Seal Sale program, public health in relation to national defense preparation, and scientific subjects.

The sessions on Apr. 17 were given over to the study of tuberculosis, organizational programs, and election of officers.

The 3 new directors elected at this meeting are William S. Moorhead, president of the Tuberculosis League, Pittsburgh, succeeding John F. Casey; Hugh J. Ryan, D.D.S., president of the McKean County Tuberculosis and Health Society and former Mayor of Bradford; Frederick S. Shaulis, M.D., Indiana, succeeding former Governor John S. Fisher, deceased.

The directors re-elected include Frederick J. Bishop, M.D., Scranton; William Devitt, M.D., Allenwood; John E. Fretz, M.D., Easton; Andrew W. Goodwin, M.D., Oil City; Esmond R. Long, M.D., Wayne; Royal H. McCutcheon, M.D., Bethlehem; C. Howard Marcy, M.D., Pittsburgh; Clarence R. Phillips, M.D., Harrisburg; George H. Robinson, M.D., Uniontown; John H. Scheide, Titusville; Miss Helen B. Stuckslager, McKeesport; Louis H. Clerf, M.D., Frank A. Craig, M.D., and Henry K. Mohler, M.D., all of Philadelphia.

The following officers were re-elected: William Wistar Comfort, Ph.D., president; John J. Shaw, M.D., State Secretary of Health, honorary vice-president; William Devitt, M.D., Devitt's Camp, first vice-president; John H. Scheide, Titusville, second vice-president; C. Howard Marcy, M.D., Pittsburgh, secretary; and Milton D. Reinhold, Philadelphia, treasurer.

Do you, as a family physician, advise that adolescents "must go through" the acne experience? See page 1167.

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A COMPLIMENT FROM GOVERNOR JAMES

With approximately 326,000 Selective Service registrants in Pennsylvania classified by the 422 local boards on the basis of their availability for military service, only 903 appeals had been made to boards of appeal, Governor James announced.

"This is a splendid record," he said, "that speaks highly for the work of the patriotic citizens who are serving without pay as members of Selective Service boards and as examiners and advisors, and also to the credit of our state as a whole."

"At the same time," the Governor said, "the Selective Service System is eager to make certain that all registrants, their dependents, and others interested in their welfare, have every opportunity to obtain review of any classification they consider unjust.

"There is an obligation upon all members of the Selective Service System who come in contact with the registrant to make certain that he understands, not alone that he has the privilege of appeal but also when he must do it and how he must do it."—*Pennsylvania Selective Service Intelligencer.*

INFANT DEATHS IN 1939

Deaths of infants under one year of age, exclusive of stillbirths, totaled 108,846, according to a final census report covering 1939.

This was in comparison with 116,702 similar deaths the year previous and represented a reduction in the ratio per 1000 live births of from 51 to 48.

That the present death total for infants—equal to the total population of cities like Canton, Ohio, and Tampa, Fla.—is susceptible to further drastic decreases is indicated by the achievements of certain states. If, for instance, the entire United States achieved the same low infant death rate that Oregon has achieved, there would have been approximately 28,000 fewer infant deaths in 1939. If, on the other hand, the high rate of New Mexico had prevailed nationally, it would have meant an increase of more than 138,000 infant deaths.

The 14 states which achieved an infant death rate of less than 40 per cent 1000 live births were, in order, Oregon, 35.5; Minnesota, 35.8; Connecticut, 35.9; Nebraska, 36.5; Washington, 36.8; Massachusetts, 37.0; Illinois, 38.0; New Jersey, 38.7; Iowa, 38.8; New York, 39.3; Rhode Island, 39.4; Kansas, 39.4; Indiana, 39.5; Utah, 39.5.

Eighteen states, including the District of Columbia, had infant death rates of between 40 and 50.

The 17 remaining states had infant death rates of from 50 up to 109 as follows: New Mexico, 109.0; Arizona, 94.3; Texas, 67.0; South Carolina, 66.2; Louisiana, 63.0; Virginia, 60.9; Alabama, 59.9; North Carolina, 59.2; Georgia, 58.4; Florida, 56.4; Mississippi, 56.2; Colorado, 54.8; West Virginia, 54.7; Tennessee, 53.9; Kentucky, 52.6; Maine, 52.4; Maryland, 50.3.

Although 48 was the average for the entire United States, the white average was 44.3, the Negro 73.2, and other races 97.2.

Compared with today's rate of 48, the rate in 1934 was 60; in 1929, 68; in 1924, 71; and in 1918, 101.—*Department of Commerce.*

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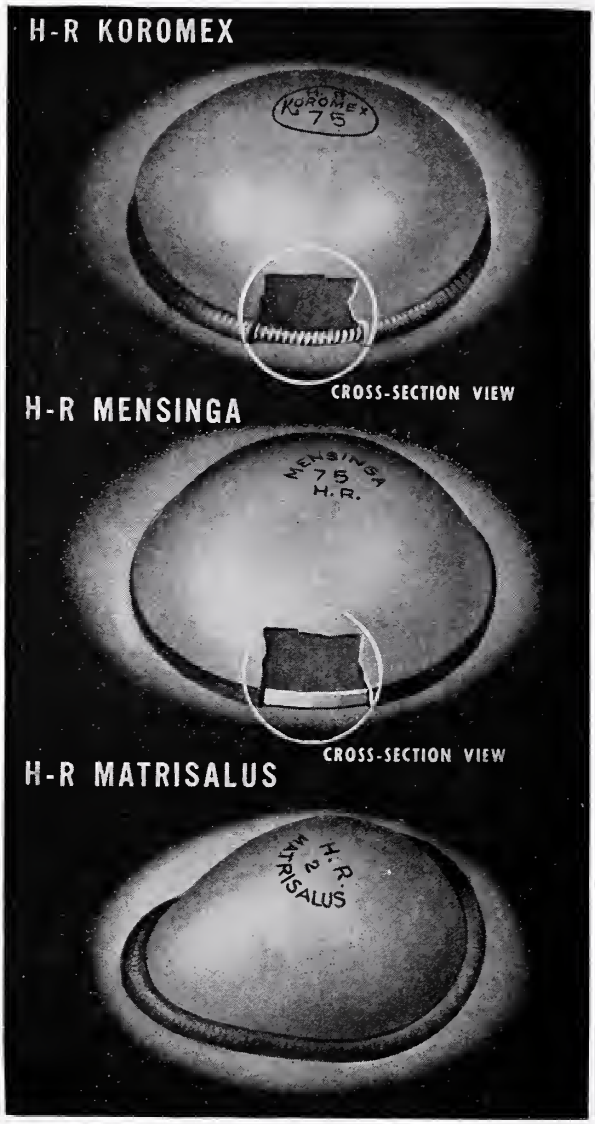

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BOOK REVIEWS

MODERN DRUG ENCYCLOPEDIA AND THERAPEUTIC GUIDE. Presenting descriptions of 11,114 modern, nonpharmacopeial, ethical medicinal preparations in 15,629 forms, comprising 3421 drugs and chemicals, 663 biologicals, 691 endocrines, 2270 ampule medicaments, 3190 individual and group allergens, and 879 miscellaneous products. By JACOB GUTMAN, M.D., Phar.D., F.A.C.P., director, Brooklyn Diagnostic Institute; consulting physician, Manhattan General Hospital, New York, the Riverdale, Shore Road, Williamsburg Maternity, and Borough Park General Hospitals of Brooklyn, etc. For the use of physicians, dentists, pharmacists, and medical students. New York: New Modern Drugs, 49 W. 45th Street. 1941. Price, $7.00.

This book is an index of the nonpharmacopeial medicinal and other preparations used in the practice of therapeutics. Descriptions, statements, analyses, and all other data are offered, without change or comment, as found available in the numerous standard works and references consulted or as obtained from the producers and distributors of the respective products.

Like its predecessor, this second edition is intended for the use of physicians, dentists, pharmacists, and medical students. Because of the many proprietary preparations on the market, such a book is of value to the medical librarian, the pharmacist, the student, and the busy practitioner. It is divided into parts and chapters which permit easy reference to the drug, the disease, or the manufacturer.

DOCTORS IN SHIRT SLEEVES. Musings on Hobbies, Meals, Patients, Sports, and Philosophy. Edited by SIR HENRY BASHFORD. New York: Veritas Press, 1940. Price, $2.50.

The physician cannot be a medical man alone, for confronted with daily tragedy and unexpected comedy, he acquires a rich store of memories.

For the past two years the *Lancet* has published a series of reminiscences and memories by physicians from musings on patients and hobbies to personal reflections and philosophies. There is a store of delightful and interesting experiences in this book. For the physician seeking an enjoyable bedside book for his few spare hours, *Doctors in Shirt Sleeves* can be well recommended.

MODERN MEDICAL THERAPY IN GENERAL PRACTICE. Edited by DAVID PRESWICK BARR, A.B., M.D., LL.D., Busch professor of medicine, Washington University; physician-in-chief, Barnes Hospital, St. Louis. Three volumes. 3781 pages. Baltimore: The Williams & Wilkins Company, 1940. Price, $35.

The volumes edited by Dr. Barr have a distinguished list of contributors who represent the technic of practice in more than 50 hospitals.

Volume I deals with general therapy, methods used in therapy, and general diseases; Volume II deals with infectious diseases, diseases of the nervous system, and diseases of the digestive system; Volume III deals with diseases of other organs and systems. Each of the sections is supplemented by a good bibliography, so that the reader can trace the historic development of each technic.

These excellent volumes tell the practitioner plainly when and how to use drugs, chemotherapy, sulfanilamide and sulfapyridine, the therapeutic use of gases, vaccines and sera, organotherapy, parenteral fluids, blood transfusions, dietotherapy, physiotherapy, hydrotherapy, diathermy and other forms of electrotherapy, artificial fever therapy, light therapy, radiotherapy, and all other good methods.

Each volume has a separate index and there is a general index in Volume III, covering the entire system. There is a considerable number of illustrations, charts, and diagrams in the volumes, all of which are chosen primarily with a view to their great usefulness.

For the physician who wishes an up-to-date work for a quick, ready reference, these 3 volumes may be heartily recommended.

PATHOLOGY. By EUGENE C. PIETTE, M.D., pathologist and director of the Clinical Laboratories of the West Suburban Hospital, Oak Park, Ill.; formerly consultant pathologist, Chicago State Hospital, and assistant professor of pathology, College of Medicine, University of Illinois, Chicago. Third edition, with 246 pages and 60 illustrations. Philadelphia: F. A. Davis Company, 1940. Price, $2.00.

Those engaged in the instruction of nurses will be interested in evaluating this little volume. The text is streamlined so that she who runs may read it without appreciable increase of fatigue.

The etiology of disease is considered broadly and material from other fields is included. The manifestations of disease are briefly described under headings of general, special, and clinical pathology, tumors, and autopsies. Procedures preliminary to gastric analyses, basal metabolic rate determinations, etc., are given, together with brief instructions for handling of smears, cultures, and specimens.

Illustrations are numerous, but some are not up to the average of present-day medical art. Outlines of chapter contents, review questions, and references to collateral reading make this a serviceable volume to those who have but a limited amount of instruction time allotted to such a large and important subject.

SURGERY OF THE HAND. By R. M. HANDFIELD-JONES, M.C., M.S., F.R.C.S., surgeon to outpatients, St. Mary's Hospital; senior surgeon, Florence Nightingale Hospital; consulting general surgeon, Hospital for Women, Soho Square; consulting surgeon to the London County Council; lecturer in operative surgery, St. Mary's Hospital Medical School; late Hunterian Professor, R.C.S.; examiner in surgery, University of Cambridge and the Society of Apothecaries. 140 pages, 95 illustrations. Baltimore: The Williams & Wilkins Company. A William Wood book, 1940. Price, $4.50.

With bombs falling upon Britain around him, the author found time to put together this small treatise upon surgery of the hand which is dedicated to the late Prof. Allen B. Kanavel, and rightly so, as the author has drawn heavily both in text and illustrative material upon Kanavel's classic *Infections of the Hand.* It is difficult to reconcile the author's statement of regard for Kanavel's work as "a model of what a surgical monograph should be" with the assertion that the same volume's "treasures are overladen with experimental work."

This well-illustrated and inexpensive little volume contains, in addition to surgery of infections, a chapter upon congenital and acquired defects as well as a chapter devoted to fractures. Therapy with the sulfanilamide group of drugs is perfunctorily outlined and is inadequate for intelligent use or safe control.

Allowance must be made for a difference between American and British points of view and practices. The average American student expects something more than a rule-of-thumb guide. Bibliography, references, and factual experience, which give a volume adaptability and save author and reader alike from an unhealthy air of finality, are absent.

A GUIDE TO HUMAN PARASITOLOGY. By D. B. BLACKLOCK, M.D. (Edin.), D.P.H. (London), D.T.M. (Liver.), professor of tropical hygiene, Liverpool School of Tropical Medicine, University of Liverpool, formerly professor of parasitology; director of the Sir Alfred Lewis Jones Laboratory, Freetown, Sierra Leone, West Africa; and T. SOUTHWELL, D.Sc., PH.D., A.R.C.Sc., F.Z.S., F.R.S.E., formerly Walter Myers lecturer in parasitology, School of Tropical Medicine, The University, Liverpool; director of fisheries to the Governments of Bengal and Bihar and Orissa; scientific adviser and inspector of pearl banks to the Ceylon Company of Pearl Fishers; honorary assistant, Zoological Survey of India. Fourth edition, 259 pages, 124 illustrations. Baltimore: The Williams & Wilkins Company, 1940. Price, $4.00.

The development of military bases, involving the residence and travel in the tropical Americas of larger numbers of our population, hails tropical medicine, of which parasitology forms a large part, as a subject of increasing importance to the profession in this country. British interest in the problems of Indian medicine was a fundamental part of the discoveries of Sir Patrick Manson, Ross, and others. The present volume derives material from the same source.

Having gone through 3 editions in the 10 years since its first publication, the present, or fourth, edition differs from the previous editions principally by modification of the description of the life history of Strongyloides stercoralis and additions to the section on Filariidae. The authors aim at simplification of their subject. Delineation is by text and line drawings. Little or no reference is made to treatment or experience with preventive or control measures. The bibliography consists of a list of a dozen larger texts.

While many parasites have a cosmopolitan distribution, the relative importance of different species varies geographically. The American student attempting to use this text may be dismayed to find that, although he is told what species are common in India, Africa, and Australia, he is frequently left in the dark as to what species may be most prevalent in this country, Central or South America.

MEDICOLEGAL OPHTHALMOLOGY. By ALBERT C. SNELL, M.D., lecturer in ophthalmology, School of Medicine and Dentistry, University of Rochester; consultant in ophthalmology, Strong Memorial Hospital, and Rochester General Hospital, Rochester, N. Y. Illustrated. St. Louis: The C. V. Mosby Company, 1940. Price, $6.00.

This new book fulfills a long-felt want. It enables the physician witness to base his findings as to the value of lost or injured eyes and the loss of the use of the eyes on sound mathematical principles, which it is hoped will end the widely divergent statements that tend to discredit the testimony of expert witnesses.

The first two chapters discuss the legal phases of the witness's testimony and the knowledge he should have of court procedure and the law. Malpractice is discussed in the third chapter.

Compensation laws, historically and practically, are well presented in the next chapter, while the last chapter in Part I is devoted to a thorough discussion of methods of evaluating visual disabilities.

The author, in chapters 7 and 13, has ably presented the masterful, mathematical, logical deductions and reasoning necessary for the evaluation of visual disabilities and the determination of fractural parts of vision, and he very properly advocates the universal use of the Report of the Committee on Compensation for Eye Injuries, Section on Ophthalmology of the A. M. A., in solving the problems.

The practical application of the "Visual Efficiency Computation to Medicolegal Practice" is the heading of Part III and the 5 closing chapters. Of particular interest is the chapter on examining of cases of injured eyes having medicolegal aspects and the chapter on malingering.

Court decisions indicate the nonmedical viewpoint and are a very interesting study. These with the "Longshoreman's and Harbor Worker's Compensation Act" are in the appendix.

Every ophthalmologist should possess the knowledge contained in this excellent volume, which is a credit to its publishers.

HEMORRHOIDS AND THEIR TREATMENT. The Varicose Syndrome of the Rectum. By KASPER BLOND, M.D., Vienna, formerly first assistant, Rothschild Hospital, Vienna; Hon. Consulting Surgeon, Municipal Hospital, Vienna. Translated by E. STANLEY LEE, M.S., F.R.C.S., Hon. Assistant Surgeon, Westminster Hospital. A William Wood book. Baltimore: The Williams & Wilkins Company, 1940. Price, $4.50.

The author has written an interesting book more in the vein of an internist than as a surgeon. It treats of lower bowel varicosities in general and ascribes all

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local abnormal conditions to these varices. The treatments are those ordinarily used by ambulant proctologists.

"Vein compression" is the term used to describe the results obtained by the interstitial injection of aqueous solutions of quinine. Small doses are used, but the percentage strength is high—20 to 30 per cent. Quinine idiosyncrasy is stressed. Some deaths from pelvic peritonitis due to bowel necrosis, following quinine injections, are described in detail.

The author has described his original conceptions of anal ulcer and anal fistula:

1. The ulcer (fissure) is a localized necrosis of a small superficial thrombosed vein.
2. An abscess is a suppurating varicosity. Hence all such cases must receive "vein compression" treatment.
3. The fistula tract is the remains of infected and suppurating varicose hemorrhoidal veins. Superior, middle, and inferior hemorrhoidal veins may be involved. Hence, all varices must be compressed before these lesions heal. Frequently, vein compression renders any surgery unnecessary.
4. Constipation is a symptom only and disappears when the internal varices are treated.
5. Pruritus is accompanied by proctitis. Proctitis, erythema, eczema, and pruritus together form a definite clinical entity, and this is one part of the rectal varicose syndrome.
6. Anastomoses between the portal and caval venous systems are much more common than has been understood hitherto, and the poisons in the portal blood may reach the prostate and the genitalia by way of the pelvic plexuses. These anastomoses are vital to the author's theory.
7. Leukorrhoea has also been included in the list of disorders which will respond to "vein compression" treatment.

These are some of the advanced ideas and they provide food for thought. Few proctologists, however, will agree with all of them. The author thinks well of his original observations and commends them highly.

The translation is good and some of the illustrations are excellent. It is a book which would be helpful and of interest only to the specialist.

THE DISPLACEMENT METHOD OF SINUS DIAGNOSIS AND TREATMENT. By Arthur W. Proetz, A.B., M.D., professor of clinical otolaryngology in the Washington University School of Medicine; Fellow of the American Laryngological Association. 296 pages. St. Louis: Annals Publishing Company, 1940. Price, $6.00.

Fourteen years ago Proetz first suggested the principles of displacement and 8 years ago he brought out the first edition of this monograph. Now that this practice has been put to the test and been found to offer all that its originator claims for it and more, Dr. Proetz has re-edited his former work. He has kept the book mostly in its original form, but in addition a great deal of collateral material has been included as well as an evaluation of the method derived from the large volume of literature, personal comments, and inquiries on the subject of displacement.

The fundamental principles, based upon a sound knowledge of sinus anatomy and physiology, are clearly stated. A comparison is made between the displacement method and other methods of drainage or irrigation such as puncture, cannulization, and exenteration. The physics and physiology of the sinuses are stressed and the movement of fluids in the normal and pathologic states is discussed thoroughly. The procedure of "washing through" after displacement, both as a diagnostic and prognostic measure, is suggested. In regard to solutions, Proetz states "the best results from all standpoints have followed the instillation of ephedrine sulfate 0.5 per cent or even .25 per cent in physiologic salt solution." Various other solutions are discussed including the radiopaques. These latter, the principles of their introduction for roentgenographic purposes, and the specialized technic of sinus roentgenology take up a large part of the volume.

Various precision apparatuses, by means of which 5 head positions for each sinus are obtained, are described and well illustrated. An interesting and instructive T-square method of viewing the sinuses in the 3 standard positions is explained, and the chapter on film interpretation leaves little to be desired in understanding this complicated subject.

Methods of selective filling and emptying, the significance of failure to fill and failure to empty within 72 hours, and the deductions to be drawn therefrom are summarized in the author's words: "In general, it may be said that cells which persist in failing to fill at all will require surgical intervention, except in cases of allergy in which the local obstruction is the immediate manifestation of a general disease rather than an intrinsic pathologic entity."

Contrary to first impressions, displacement in children presents no special technical difficulties. Furthermore, the radiopaques may be used as readily in children as in adults. Allergic changes in the nose and sinuses may also be visualized to advantage through the radiopaques introduced by displacement.

A series of case records are convincing enough of the efficacy of the displacement technic, and the review of the ample literature on this subject and its widespread acceptance by clinicians in this country and abroad are likewise convincing. Innovations in regard to apparatus, solutions, and technics for treatment and radiography have been numerous and they are evaluated by Dr. Proetz in his closing chapter.

There is no question in this reviewer's mind that the principle of displacement has gained widespread approval, and a thorough knowledge of the methods and principles described in this monograph should form an active part in the therapeutic armamentarium of the rhinolaryngologist.

1940 YEAR BOOK OF PATHOLOGY AND IMMUNOLOGY. Pathology edited by Howard T. Karsner, M.D., professor of pathology, director of the Institute of Pathology, Western Reserve University. Immunology edited by Sanford B. Hooker, M.D., professor of immunology, Boston University School of Medicine; immunologist, Massachusetts Memorial Hospitals. 688 pages with 115 illustrations. Chicago: The Year Book Publishers, Inc., 1940. Price, $3.00.

For the benefit of anyone who may be unfamiliar with the Year Book plan, it might be said that these little

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volumes consist of selected and summarized articles in each of the branches of medicine and surgery. This particular volume contains articles on the subjects of pathology and immunology. These articles are abstracted from all the leading journals, both domestic and foreign. In all, 678 articles selected from a total of 119 journals comprise the text. It embraces 105 microscopic and biochemical investigations and 163 clinical studies, 76 of these latter dealing with immunologic problems.

Many therapeutic and diagnostic procedures are discussed, and of exceptional interest are the scholarly personal criticisms made by the editor at the end of several of the abstracted articles.

Outstanding and important subjects such as "The Relation of Lymphatic Vessels to the Spread of Cancer" and "Experimental Hypertension" with an up-to-the-minute review of the very recent and interesting "Goldblatt kidney" are discussed. There are many excellent histologic illustrations in the section on pathology.

The section on immunology is of considerable interest and among its many abstracts will be found several dealing with the fungous infections and their immunologic relationships. Also in this section the subjects of chemotherapy (not including any articles on sulfathiazole!), anaphylaxis and allergy, blood groups, and antigen-antibody reactions are well represented. Lastly, the recent literature in the field of bacteriology is reviewed.

Pathologists and immunologists as well as members of the other specialties who are interested in keeping abreast of the times in regard to the fundamental sciences will find considerable material of interest in this particular volume.

TRANSACTIONS OF THE AMERICAN PROCTOLOGIC SOCIETY. Forty-first annual session, Richmond, Va., June 9-11, 1940. Harry E. Bacon, B.S., M.D., F.A.C.S., editor. 296 pages. St. Louis: The C. V. Mosby Company.

Some twenty-odd papers reflect recent advances in the specialty of coloproctology beginning with a presidential address by Martin S. Kleckner, M.D., F.A.C.S., Allentown, Pa.

Among the many interesting papers, "Present-Day Diagnosis of Diseases of the Colon" by Douglass Palmer, M.D., New York City, together with "Review and Bibliography of Proctologic Literature for 1939" by J. Peerman Nesselrod, M.Sc., M.D., F.A.C.S., Evanston, Ill., and C. J. De Bere, M.D., F.A.C.S., Chicago, Ill., will probably amply reward any member of the medical profession for the reading.

THE CRIMINAL A. M. A.

So the A. M. A. and the Medical Society of the District of Columbia are convicted of being criminally guilty of violation of the Sherman Act! The officers of these organizations were quite inconsistently acquitted, as well as the other individual doctors indicted. We understand the case is to be appealed to a higher court.

To anyone who had the patience to plow through the reams of testimony which appeared in the *A. M. A. Journal,* much of the evidence might well have been considered irrelevant, incompetent, and immaterial. The charge to the jury given by Associate Justice Proctor offered much food for thought however. There were some fine distinctions involved and much could be said, and was said, on both sides.

The purpose of the indictment was, without doubt, to undermine the resistance of organized medicine to new and unapproved forms of group practice. Hundreds of new methods are already being tried out by physicians throughout the country to make medical service more available to the public at large. Certainly, the majority of the medical profession, and this means the organized profession, is in a better position to judge the comparative values of new methods of medical practice than any other element in society. The members of the organized profession, it seems, can legally express their disapproval of an organization like the Group Health Association, but cannot legally take any steps that might interfere with the association's activities.

It is perhaps consoling that we, as individual members of the A. M. A., are not adjudged criminals and that the hospitals that barred their doors to nonmembers of the A. M. A. were not criminals.

Now that doctors, from the standpoint of the Sherman Act, are engaged in trade, perhaps we should follow the suggestion made in one newspaper editorial and behave like a union, have a pay schedule, demand full pay for what we now render to charity (for what union contributes in any comparable way to public charity), a 35-hour week, and time and a half for over time.

After all, we are members of a profession and not a trade, the distinguishing feature of a profession being that financial compensation is not the main consideration.

It does not seem right that elements in our society should be resorting to expensive legal battles at a time when every effort should be expended to prepare for probable serious exigencies. The expense of this litigation has necessitated certain curtailment in A. M. A. activities. Nevertheless, it is incumbent on the organized profession to fight for its rights and to resist the tendency in governmental circles to overregulate medical practice.—*Minnesota Medicine.*

SIMPLIFIED IRON LUNG COVERS ONLY THE TORSO

A simplified iron lung, used for aiding artificial breathing in the treatment of conditions when the respiratory muscles fail to function, has recently been invented. It encloses only the patient's torso. New means are used for the prevention of air leaks, which are especially troublesome in a small respirator with its limited total volume of air.—*Science News Letter,* Feb. 22, 1941.

NEW SECRETARY FOR COUNCIL ON PHARMACY AND CHEMISTRY APPOINTED

Theodore G. Klumpp, M.D., chief of the Drug Division of the Food and Drugs Administration of the United States government, has been appointed secretary of the Council on Pharmacy and Chemistry of the American Medical Association to take office on July 1, the Board of Trustees of the association announces in *The Journal* of the association for May 24.

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Every precaution has been taken to insure accuracy in these advertisements and in this index, but there is no guarantee against errors or omissions.

Dr. Klumpp will succeed Paul Nicholas Leech, Ph.D., who died suddenly on Jan. 14. In addition to serving as secretary of the Council on Pharmacy and Chemistry, Dr. Klumpp also will serve as director of the Chemical Laboratory and director of the Division of Foods, Drugs, and Physical Therapy of the association.

The announcement in *The Journal* contains the following biography:

"Dr. Klumpp graduated with the degree of bachelor of science from Princeton University in 1924, magna cum laude; in 1928 he received the degree of doctor of medicine from Harvard Medical School; in 1939 he was made a fellow of the American College of Physicians. Following graduation in medicine he did research and investigative work in the Children's Hospital in Boston for one year. He served as intern in the Peter Bent Brigham Hospital for one year and as assistant resident physician in Lakeside Hospital, Cleveland, from 1930 to 1932. Then he accepted the appointment as instructor in internal medicine at Yale University Medical School, associate physician in the New Haven Hospital, chief of the Hematology Clinic and director of the Medical Laboratories in the New Haven Hospital, holding these positions from 1933 to 1936. At the same time he was associate examiner of the National Board of Medical Examiners and secretary of the Yale Medical Society. From 1936 to 1937 he was assistant clinical professor of internal medicine in Yale University. At this time also he accepted the appointment as medical officer of the Food and Drugs Administration in the United States Department of Agriculture, becoming chief medical officer and then chief of the Drug Division in the Food and Drugs Administration, which is now a part of the Federal Security Administration.

"In recent years Dr. Klumpp has kept in touch with medical science by serving as adjunct clinical professor of medicine in George Washington University School of Medicine and attending physician in the Gallinger Municipal Hospital of Washington, D. C. He holds membership in many important organizations, including the American Society for Clinical Investigation, the American Association for the Advancement of Science, the American College of Physicians, and Sigma Xi. The bibliography of his writings begins in 1928 and includes more than 25 contributions on various aspects of research and administration in public health."

LONDON BOMBINGS DEVELOP NEW USE FOR STETHOSCOPE

A new use for the stethoscope is reported by the regular London, England, correspondent of *The Journal of the American Medical Association* in the Mar. 15 issue. He says:

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LETTERS

Private Practitioner's Rôle in Syphilis Control in Pennsylvania

GENTLEMEN:

Pennsylvania is one of the few states which require a report on syphilis that is in the *infectious* stage as contrasted with syphilis that is not contagious. The regulation reads in part as follows:

> "1. Anyone suffering with syphilis, the duration of whose infection is less than 4 years, or who presents open syphilitic lesions of the skin or mucous membrane shall be considered as potentially endangering the public health, and it shall be the duty of this person to receive proper treatment for this infection.
>
> "2. Any physician who makes a diagnosis of syphilis as laid down in Paragraph 1 above shall make a report of such case direct to the Pennsylvania Department of Health, Harrisburg, Pa., by number without name and address.
>
> "3. It shall be the duty of the attending physician to report to the Pennsylvania Department of Health, Harrisburg, Pa., the name and address of any person who fails to report for treatment within a period of 2 weeks after the time designated unless the attending physician has knowledge of good and sufficient reason for delay."

You will be interested to learn that during the year 1940 a total of 628 physicians reported that 1471 patients with syphilis had come to them for treatment. During the same period 420 patients were reported as delinquent in treatment in accordance with the regulations. Through the machinery of the State Department of Health, 313 of these delinquent patients were returned to the physicians for treatment.

During the same period the public clinics of the state reported that 11,173 patients had come to the clinics for treatment. This includes hospital clinics of the state almost without exception.

When this large number of patients who entered the free clinics of Pennsylvania in one year is set against the number of patients whom private physicians reported as having come to them for treatment, it would appear as though the great majority of physicians did not comply with the regulation.

The regulation is designed with one thought only—that contagious syphilis be treated in order that the infection be stopped at its source. It is not the concern of a health department as to what may become of an individual who has syphilis in a stage that is not contagious or that is not liable to become contagious. On the other hand, it is the responsibility of a public health department to see if possible that syphilis is not carried from one person to another. Treatment that is properly administered to the syphilitic carrier whose infection is less than 4 years' duration is the means of stopping the spread of syphilis.

Syphilis is an endemic disease that is composed of numerous foci of infection. Destroy the foci and the endemic ceases. Treatment of the infected individual is the only means offered for the destruction of syphilis.

It is the hope of the State Health Department that infectious patients will be kept under treatment and that there will be no delinquency. The Department of Health has a service in this respect that it offers to the physicians of Pennsylvania. Patients cannot be returned for treatment unless their delinquencies are reported. The co-operation of the private physicians of the state is earnestly requested.

JOHN J. SHAW, M.D.,*
Secretary of Health,
Commonwealth of Pennsylvania,
Harrisburg, Pa.

Meeting Date Announced

GENTLEMEN:

Medical societies and physicians appreciate knowing long in advance the dates of important national medical meetings. Societies especially want to avoid conflicting dates for their meetings.

We hope that the following announcement will appear in THE PENNSYLVANIA MEDICAL JOURNAL. We shall gladly reciprocate by publishing some announcement for your organization.

The American College of Physicians announces that its twenty-sixth annual session will be held in St. Paul, Minn., from Apr. 20 to 24, 1942.

Dr. Roger I. Lee, of Boston, is president of the college, and will be in charge of the program of general sessions and lectures. Dr. John A. Lepak, of St. Paul, has been appointed general chairman, and will be in charge of the program of hospital clinics and round-table discussions, as well as local arrangements, entertainment, etc. Mr. Edward R. Loveland, executive secretary of the college, 4200 Pine Street, Philadelphia, will have charge of the general management of the session and the technical exhibits.

E. R. LOVELAND, *Executive Secretary,*
American College of Physicians,
Philadelphia, Pa.

Free Splints for Infantile Paralysis Patients

GENTLEMEN:

The National Foundation for Infantile Paralysis is trying constantly to give every possible aid to infantile paralysis patients through the combined efforts of its chapters and the parent organization.

Within the scope of its national activities the foundation is carrying on an extensive educational campaign as to the proper care and treatment of poliomyelitis patients, and whenever an outbreak of epidemic proportions occurs it stands ready to render every assistance that it can command.

One of the many responsibilities that the foundation has assumed as an invaluable aid to infantile paralysis patients in the acute stages is the free distribution of Toronto splints and Bradford frames in epidemic areas and to indigent persons, regardless of age, who may need them. Over 3000 of these appliances have been

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* Deceased June 24, 1941.

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BASIL O'CONNOR, *President,*
The National Foundation for Infantile Paralysis, Inc.,
New York, N. Y.

A "Cover-to-Cover" Reader

GENTLEMEN:

As is my custom, I have read the April issue of THE PENNSYLVANIA MEDICAL JOURNAL from cover to cover, and you truly state on page 873 that it does offer unusually well so many phases of medical practice. A remarkably good journal you are giving us; my only regret is that so much space is required for death notices. My congratulations to you and your associates.

JOHN B. MCALISTER, M.D.,
Harrisburg, Pa.

Diabetes Educational Program

GENTLEMEN:

This company is launching during May an educational program for the control of diabetes. Field representatives are placing a new popular leaflet on diabetes —"Do You Know?"—in over one million homes throughout the country. In the leaflet, written in question and answer form, diabetes is discussed in simple understandable language. Its purpose is to acquaint the layman with some of the basic facts about diabetes, and to emphasize the importance of a medical examination with urinalysis as a means of discovering the disease.

The company's advertisement in national magazines for May is on diabetes, and a news release has been provided for local papers.

State and county medical societies, health officers, the company's medical examiners, and other professional groups have been advised of the program. Many have given it enthusiastic endorsement. Special literature has been provided for the use of physicians, and field representatives have been asked to bring this material to the attention of physicians in their local communities.

Diabetes ranks high as a cause of death in age groups of 35 years and over. Two problems must be met—the early discovery of diabetes and the encouragement of the diabetic to co-operate with his physician. Due to alertness on the part of physicians in discovering diabetes, many more cases are now recognized and are under treatment. It has been said that "the patient needs to know as much about diabetes as the physician." The low mortality records in the practices of those physicians who have stressed the education of their diabetic patients prove the truth of this statement. It is the hope of the company that through the interest aroused by this educational effort many persons will consult their physicians and, where diabetes is revealed,

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will thus come promptly under close medical supervision.

Materials in the packet being distributed to physicians include:

1. Do You Know?—a pamphlet for the lay public—described in the first paragraph.
2. Diabetes in the 1940's—for physicians. A concise manual of diagnosis and treatment based on the experience of the George F. Baker Clinic in Boston.
3. Diabetes—a pamphlet for diabetics giving in simple language information on diet and on the prevention of diabetic complications. It emphasizes the need of very close co-operation with the physician. Physicians may wish copies for their diabetic patients.
4. Diet Card—a convenient card for the physician's use in outlining the patient's diet.
5. Identification Card—a card which states that the bearer is a diabetic, and provides space for his address and that of his physician. Available to physicians for use with diabetic patients.
6. Diabetes Advertisement—a copy of the May advertisement suitable for office display.

Additional copies of any of this material are available to physicians. It may be ordered through any local representative, or by writing to us directly.

In addition to the material included in the packet, there are available for medical groups and professional meetings a motion picture on diabetics, a set of lantern slides, and a technical exhibit. We shall be glad to give further information on any of this material if you are planning medical meetings at which it could be used.

Any suggestions for increasing the effectiveness of the program or for suitable follow-up procedures will be appreciated.

Donald B. Armstrong, *Third Vice-president,*
Metropolitan Life Insurance Company,
New York, N. Y.

This program has been approved by The Medical Society of the State of Pennsylvania. Your attention is called to the communications on page 1348 of this issue.—The Editors.

SCHOLARSHIP AWARDED

The scholarship at the Trudeau School for Tuberculosis at Saranac Lake, which was offered by the Pennsylvania Tuberculosis Society, has been awarded to James A. Biggins, M.D., of Sharpsville, secretary of the Mercer County Medical Society.

This scholarship makes possible a 6-weeks' postgraduate course in tuberculosis—4 weeks at the Trudeau School and 2 weeks at Bellevue Hospital, New York City.

Dr. Biggins graduated from Notre Dame University with the B.S. degree in 1931 and he secured his medical degree at Temple University, Philadelphia, in 1935. He did postgraduate work in electrocardiography at the University of Michigan in 1940. He was an intern at Mercy Hospital, Pittsburgh, and a general resident physician at the Indiana (Pa.) General Hospital.

The judges for the scholarship were C. Howard Marcy, M.D., and W. Roderick Brown, M.D., Pittsburgh; William B. Perry, M.D., and Daniel A. Brooks, a public school principal in Philadelphia.

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LIST OF COUNTY MEDICAL SOCIETIES OF PENNSYLVANIA

COUNTY SOCIETY	PRESIDENT	SECRETARY	MEETINGS
Adams	Raymond F. Oyler, Biglerville	Bruce N. Wolff, Gettysburg	Monthly
Allegheny	Frederick M. Jacob, Pittsburgh	George R. Harris, Pittsburgh	Monthly
Armstrong	Benjamin J. Longwell, Seminole	Jay B. F. Wyant, Kittanning	*Monthly
Beaver	Philip F. Martsolf, New Brighton	J. Willard Smith, Beaver Falls	Monthly
Bedford	Edward A. Shields, Bedford	James R. Myers, Everett	Monthly
Berks	Chester K. Kistler, Reading	Clair G. Spangler, Reading	Monthly
Blair	Ralston O. Gettemy, Altoona	Harry D. Collett, Altoona	*Monthly
Bradford	J. K. Williams Wood, Troy	Stanley D. Conklin, Sayre	Monthly
Bucks	Albert A. Gonzalez, Croydon	J. Fred Wagner, Bristol	6 a year
Butler	Max S. Nast, Butler	Ralph M. Christie, Butler	*Monthly
Cambria	William B. Templin, Johnstown	Paul McCloskey, Johnstown	Monthly
Carbon	Susan Tomchik, Lansford	John L. Bond, Lehighton	Bimonthly
Centre	H. Thompson Dale, State College	†Le Roy Locke, Bellefonte	Monthly
Chester	Robert T. Devereux, West Chester	Joseph Scattergood, Jr., West Chester	Monthly
Clarion	Edward J. Keeling, Clarion	James M. Hess, Fryburg	Quarterly
Clearfield	Richard L. Williams, Houtzdale		Monthly
Clinton	Robert F. Dickey, Lock Haven	Henry G. Hager, Jr., Lock Haven	Monthly
Columbia	Howard R. Rarig, Berwick	†Claude W. Ashley, Bloomsburg	Monthly
Crawford	Charles E. Mullin, Cambridge Springs	†John C. Davis, Meadville	Monthly
Cumberland	Charles M. Shaffer, Carlisle	Richard R. Spahr, Mechanicsburg	Bimonthly
Dauphin	Howard K. Petry, Harrisburg	Harvey A. Simmons, Harrisburg	*Monthly
Delaware	Franklin E. Chamberlin, Glenolden	†Augustus H. Clagett, Upper Darby	Monthly
Elk	Charles N. Silman, St. Marys	Fred E. Murdock, St. Marys	*Monthly
Erie	James A. M. Russell, Erie	Norbert D. Gannon, Erie	Monthly
Fayette	Fred H. Harrison, Connellsville	John N. Snyder, Masontown	Monthly
Franklin	Frank J. Corbett, Fayetteville	Ambrose W. Thrush, Chambersburg	Monthly
Greene	Vinton P. King, Waynesburg	Albert J. Blair, Waynesburg	Monthly
Huntingdon	Frederic H. Steele, Huntingdon	Donald C. Malcolm, Alexandria	Monthly
Indiana	Frederick S. Shaulis, Indiana	Joseph W. Gatti, Indiana	Monthly
Jefferson	Sylvester S. Hamilton, Punxsutawney	Francis J. Trunzo, Punxsutawney	Monthly
Juniata	George G. Dawe, Mifflintown	Robert P. Banks, Mifflintown	Bimonthly
Lackawanna	John E. Manley, Scranton	John Lohmann, Scranton	Weekly
Lancaster	Charles S. Duttenhofer, Churchtown	Charles P. Stahr, Lancaster	Monthly
Lawrence	H. Cyrus Harper, New Castle	William A. Womer, New Castle	Monthly
Lebanon	Edward L. Jones, Lebanon	J. DeWitt Kerr, Lebanon	*Monthly
Lehigh	Paul C. Shoemaker, Allentown	J. Frederic Dreyer, Allentown	Monthly
Luzerne	Joseph V. Connole, Wilkes-Barre	Lachlan M. Cattanach, Wilkes-Barre	*Semimonthly
Lycoming	F. Raymond Adams, Watsontown	Stuart B. Gibson, Williamsport	Monthly
McKean	Edward J. Phillips, Bradford	James E. Woodhouse, Bradford	Monthly
Mercer	Jonathan B. Perrine, Grove City	James A. Biggins, Sharpsville	*Monthly
Mifflin	Marlin W. Helfrick, Belleville	John R. W. Hunter, Jr., Lewistown	Monthly
Monroe	Moses J. Leitner, Bushkill	Harold B. Flagler, Stroudsburg	4 a year
Montgomery	George R. Irwin, Bridgeport	Walter J. Stein, Ardmore	*Monthly
Montour	Vincent J. Cassone, Danville	Sydney J. Hawley, Danville	Monthly
Northampton	Arthur B. Hamilton, Bethlehem	Dudley P. Walker, Bethlehem	*Monthly
Northumberland	George M. Simmonds, Shamokin	Mark K. Gass, Sunbury	*Monthly
Perry	William H Gelnett, Millerstown	Catherine Johnston, New Bloomfield	Bimonthly
Philadelphia	Edward L. Bortz, Philadelphia	Henry G. Munson, Philadelphia	*Monthly
Potter	Bernard S. Bretherick, Roulette	J. Irving Bentley, Coudersport	Bimonthly
Schuylkill	Peter B. Mulligan, Ashland	Charles V. Hogan, Pottsville	Monthly
Somerset	Bradley H. Hoke, Jr., Salisbury	Bradley H. Hoke, Meyersdale	Bimonthly
Susquehanna	James J. Grace, Montrose	Abram E. Snyder, New Milford	4 a year
Tioga	Charles W. Sheldon, Wellsboro	Robert D. Leonard, Tioga	Monthly
Venango	Cecil H. Hodgkinson, Oil City	Norman K. Beals, Franklin	Monthly
Warren	Tom K. Larson, Warren	Hilding A. Bengs, Warren	Monthly
Washington	George L. McKee, Burgettstown	Albert E. Thompson, Washington	*Monthly
Wayne-Pike	Hobart N. Owens, Hawley	H. R. Patton, Damascus	Bimonthly
Westmoreland	Paul G. McKelvey, Greensburg	Richard S. Cole, Greensburg	*Monthly
Wyoming	Van C. Decker, Nicholson	Arthur B. Davenport, Tunkhannock	Bimonthly
York	Herman A. Gailey, York	H. Malcolm Read, York	*Semimonthly

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* Except July and August.

† Acting for Secretaries Hoffman, Moser, Benz, and Klopp, who are in military service.

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[1] Cooke, R. A., and Stull, A.: *J. Allergy* 4: 87, 1933.

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The Position of Pediatrics in the Present-Day Practice of Medicine

BORDEN S. VEEDER, M.D.
St. Louis, Mo.

IT IS a pleasure and honor to speak before the Pediatric Section of The Medical Society of the State of Pennsylvania. To me it is in many ways a home-coming, as the first 8 years of my medical life were spent in Philadelphia as student, house officer, and teacher, and I am proud to possess a certificate of membership in your society dated 30 years ago this month. These early associations have always held me close to and interested in medical Philadelphia, and some of the friendships formed in these early years have remained among the closest I have had. For these reasons I do not feel like a stranger who has come a thousand miles to deliver a lecture, but rather as one of you who has been away on a long extended vacation and is returning to tell you of his trip.

It has been my fortune during the past 30 years to have taken a small part in one of the most striking developments in American medicine, for I am quite sure that future medical historians will consider pediatrics as epitomizing, if not being the bellweather of, the remarkable changes which have taken place in medical education and practice during the period 1910 to 1940. It is only the small group of older men like myself, and I trust this refers to the span of our life in pediatrics rather than chronologic age, who have lived through and been a part of this development who appreciate its significance and the effect it has had upon the practice of medicine. It is my purpose to summarize briefly some of these developments and influences and their relation to the situation of pediatrics in present-day practice. In a broad and loose way these changes and developments may be grouped as resulting from 3 underlying causes—medical education with the remarkable advances in medical science and knowledge, changes in the social and economic structure of American life, and lastly, the development during this period of what we may call a national child consciousness.

Let me go back to the first decade of this century when I was a medical student and started out to be a pediatrician. In not more than a half dozen of our medical schools was pediatrics more than an unimportant subdepartment of medicine and the teaching was on a corresponding level. How well I remember our instruction in infant feeding at the university in 1906 and 1907. We worked out mathematical feeding formulas on a blackboard, or spun cardboard wheels and read off the answer like on a modern pari-mutuel machine to find out what the baby should get to eat. (The simile is quite apt, as it was really quite a gamble.) As for the baby himself, his peculiarities and illnesses, we practically were never shown one. It somewhat paralleled the methods of mail order diagnosis and treatment. The infant mortality rate was at a level that today seems almost unbelievable.

One of my most vivid recollections is my last summer (1911) in Philadelphia. The thinking physicians were beginning to attack this problem of high infant mortality with its tremendous peak in the months of July and August. In Philadelphia a group led by the late Dr. Charles A. Fife obtained the closed country department of the Children's Hospital at Wynnefield and opened it as a summer hospital for infants. This was the beginning of your Babies' Hospital in Philadelphia. Dr. Kenneth D. Blackfan and I lived there as residents. Our 40 beds were constantly filled and the admissions were governed by death making a bed available for another infant. The mortality was frightful. Many who managed to survive the summer died later of chronic nutritional disorders engendered by the acute summer complaint. While today with our knowledge of water and mineral metabolism we could treat these cases with a greater degree of success, the summer problem has been almost completely solved by an attack based on prevention rather than treatment. In 1911 when I went to St. Louis the infant mortality rate was around 135 as contrasted with one under 50 for

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Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

the United States as a whole in 1939. Every graph of 25 to 30 years ago shows a high summer peak, while the peak today comes in the winter months with the respiratory infections.

When I decided in 1908 to "go into pediatrics," I looked around to find where I could obtain training comparable to the training available to my contemporaries entering surgery, neurology, and other special fields. There was not a single children's clinic worthy of the name in the United States. Training as we know it today simply did not exist and so, like most of the physicians of my period, I had to get on a boat and go to Europe. Hospitals for children at that time were few and far between and in most the orthopedic service loomed large. I recall one I saw in 1911, not in Philadelphia, where it was necessary to light the gas jet to see the babies in the infant ward. There were scarcely a half hundred men who with honesty could be called children's specialists, and quite frankly most of them instead of working together spent a not inconsiderable part of their time calling each other names. As I look back upon it, pediatrics was not a very promising prospect for a young man. When Dr. Blackfan and I were offered the opportunity to go West and take part in the development of a new clinic organized on university lines, the two pediatricians we both admired and respected most urged us to take the step, as they considered the situation hopeless in Philadelphia. The attention paid to children, who form a large part of the practice of the general practitioner, was distinguished in our medical schools of those days chiefly by its neglect. Nowhere, so far as I have ever been able to find out, was the one thing considered which forms the real basis for pediatrics as a special field—the child.

Let us consider briefly some of the changes and developments which have taken place which lead up to the existing situation. The strides in medical knowledge have become enormous as far as pediatrics is concerned. Infant mortality has been reduced, as the result of many interplaying factors, to a level that seemed impossible 25 years ago. With this there has been coincident reduction in morbidity. Infant feeding is now so simplified and improved that it is possible to teach it satisfactorily in the medical school, and the general practitioner of recent years can give better care to over 95 per cent of the babies in his practice than the pediatrician of 30 years ago. Diphtheria through preventive measures has become of minor importance. The bowlegged rachitic child who filled so many beds in the children's wards 30 years ago is a curiosity today. Tuberculous peritonitis is practically never seen. So I might go on and on. Infectious lesions of the central nervous system are seemingly the only group of diseases on the increase, if we leave out psychogenic disturbances due to the increasing complexity of modern life. The child of today is a healthier, better developed physical specimen than the child of a quarter of a century ago, and has not only fewer but far less serious and fatal illnesses.

In our medical schools there has been a decided change. In all but a few, pediatrics has been made a major division of clinical teaching with its own departmental staff. A survey made in 1929 by a committee of the Third White House Conference showed the change that had taken place and pointed out the defects at that time. A check 5 years ago showed that with few exceptions the defects had been remedied and that as a whole the undergraduate teaching of pediatrics was fairly satisfactory.

Our children's hospitals, many a part of university clinics, have multiplied and as a rule are physically adequate. Many of our schools have a number of full-time men in the departments, and scientific research has gone ahead by leaps and bounds. In many departments this has been of a character and subject similar to research in internal medicine, and quite frankly not a few heads of pediatric departments could be transferred to direct departments of medicine. The growth is shown quite graphically by the increase in the number of men limiting their work to the specialty. From perhaps 50 in 1908 the number had increased to 689 by 1928. During the next 10-year period there was an increase of 220 per cent, and so by 1938 we find 2205 listed in the medical directory. Our children's hospitals and clinics have today over 300 approved residencies in pediatrics available for graduate education. The American Board of Pediatrics has certified to date 1620 candidates for certification. From far down on the list 30 years ago, our special field today stands next to surgery and internal medicine as regards the number of men who are practicing as specialists.

The Diminishing Child Population

It has been difficult to get rid of the conception that disease in childhood is something quite different from disease in adults. The difference lies not in the etiology or causes, but rather in the fact that we are dealing with pathologic changes in a developing growing organism, and hence the reactions are different. Tuberculosis has the same cause, but the tissue reactions are quite different. The common contagious diseases are considered as children's diseases because it is at this time the wave-like epidemics find quantities of susceptible material, but consider what happens when measles finds an isolated nonimmune adult population. A few diseases as rickets, for example, are limited to childhood, as they are lesions of growing tissues. In a similar way the sclerotic processes of the geriatric period are absent. The knowledge that the physician who works with children must have does not differ much from that of the internist as far as the etiology, pathology, diagnosis, and treatment of disease are concerned, but he must have a knowledge of growth and development to understand the differences in reaction and those relatively few conditions directly related to these factors.

One of the more important matters we must consider in discussing the present situation and future trends lies in the relative decrease in the child population of the United States, together with certain socio-economic factors involved. Recent decennial census figures are not as yet available for comparison with previous census figures, but birth statistics of the registration area show the trend. Thus a birth rate of 25.1 per 1000 of estimated population in 1915 steadily decreased to 21.5 (14 per cent) in 1925, and to 16.9 in 1935, or approximately a third in 20 years. The low point of 16.5 was reached in 1938, and we are still about a third under the figures of a quarter of a century ago. Thus there has been no increase in the general childhood population who potentially at least require medical care.

The actual number of births in the registration area in the 10-year period 1929-1938 shows an almost fixed yearly figure of a little over two million (2,169,920 in 1929 and 2,287,980 in 1938). Over 80 per cent of the slight increase has been in the urban population representing the drift to cities. It is important to consider the situation by states in this 10-year period. In the high-income group of states, where the ratio of physicians to population has been increasing, there has been an actual decrease in the number of births. For example, in Pennsylvania there were over 12 per cent fewer births in 1938 than in 1929; in New York a similar decrease, and in Massachusetts over 16 per cent fewer. The increases, which about balance the figures for the United States as a whole, were in the low-income group of states, as for example, South Carolina (4 per cent) and Georgia (9 per cent).

Some figures recently published give information from a somewhat different angle by comparing the number of persons per family. Between 1910 and 1930 the greatest decline, 10 per cent, was in the size of families of professional groups. Next came proprietary with 6 per cent, clerical with 5 per cent, workers 3 per cent, and farm owners 1 per cent. Families of farm renters increased 5 per cent in size and of farm laborers 15 per cent. Information as to the relation of national income to child population may be shown by dividing the 48 states into 3 groups of 16 each, according to the per capita income in 1937. In the 16 states with the lowest per capita income, and with approximately only 18 per cent of the total national income, we find about 35 per cent of the population under 15 years of age. In the middle third with around 22 per cent of the national income are 22 per cent of the children. In the highest third with 60 per cent of the income are only 43 per cent of the children. Thus in two-thirds of our states which have but 40 per cent of the national income we find 57 per cent of the child population. These figures, of course, do not represent the distribution according to family income. Light on this is found in a statement in the report of the National Health Conference in 1937 whose validity I have never seen questioned: "One-half of the two million babies born each year—a million babies—are born to families either on relief or with less than $1000 annual income. The death rate among infants in families with incomes of $500 was 5 times the death rate among families with incomes of $3000 or more."

To summarize these socio-economic figures, we find that during the past 30 years the child population has not increased as in the past in the United States, but relative to the total population has decreased. There has been an actual decrease in the number of births in the economically better situated states, and today one-half of the children born in America are so situated that their parents are no longer able to pay for good medical care. This, to say the least, has important implications as far as pediatrics in the practice of medicine is concerned.

A third influence upon the growth of pediatrics and its position in medical practice may be summed up as a part of what we may term "child consciousness." While men's thoughts during the past 30 years have been largely turned toward political events due to the unparalleled era in which we have been living, I am quite sure that in the United States second place would go to the child. At times I have wondered whether or not this emphasis on the child was not in part a reaction to the situation which we as adults have brought upon ourselves, and a subconscious expression of a hope that the child of today will make a better and more happy world than our generation has known. All phases of child life, the home, parental relations, religion, recreation, above all education, as well as child health, have been the theme of endless discussion. At times it has seemed as if we have reached a position where the child is an end in himself, and the purpose of it all, which is to bring the child through its period of development to a sane and sound maturity, is lost from sight.

In all this discussion child hygiene has been a dominant theme, as it is inseparably linked with every phase of child life. There has been an unusual amount of emotionalism and loose thinking connected with it. Literally hundreds of books about the child have been published in the past 20 years, and column after column appears regularly in our daily press and magazines, containing many fatuous, half-baked ideas which are broadcast by educators, psychologists, and physicians writing health advice. Many of the last group, it is sad to say, have neither practiced medicine nor had any practical experience with children. This focus of attention, not necessarily thought, on the child has decidedly influenced medicine and medical practice. I am more than ever convinced of the truth of a statement I made some 15 years ago that the growth of pediatrics as a specialty is in no small part a response to a demand on the part of the public for better medical care for the child. A large part of the scientific development is an outgrowth of and has followed this demand rather than that the development of new knowledge has created the special field.

Not only is this effect of child consciousness reflected in our attitude toward the child as an individual but it has led to decided changes in the national attitude toward medicine. We must recognize in the child population the greatest asset of a nation. It is an asset that may not always be used for good; a Hitler blitzkrieg would have been impossible without the preceding "Hitler-jügend" movement. The decline of France and the rise of Germany began in the latter part of the past century with the fall of the French birth rate and the rise of the German, in which the so-called victory of France in the World War was but an interlude. The drift in the United States to regard child health as a matter of national importance, a movement which had been proceeding slowly during the previous 15 years on a humanitarian basis, was accelerated rapidly by the World War and the findings of the World War draft. In 1910 there were but two states in the Union with divisions of child hygiene. Today every state and territory has an active well-organized department. The Sheppard-Towner bill of 1921 allotting federal appropriations for child health to the states was bitterly opposed by many and by the A. M. A. In the recent much discussed Wagner Bill, that part calling for increased appropriations for this purpose was about the only unopposed item, and was approved by the A. M. A. and the medical profession.

Whether or not it has been conscious in our thought, the fact remains that child health and welfare have become an accepted responsibility of the state in the past 20 years. This is a fundamental change, and it has had and will continue to have a marked influence on pediatrics and the practice of medicine. There is still and will continue to be much discussion as to the extent and scope of this responsibility. If I were to venture certain prophecies today, the one I feel most certain of is that the present emergency, whatever its outcome, will lead to the acceptance of more responsibility for the child on the part of the government, and a more intensive development of child health activities on the part of the state.

With this sketchy discussion of trends and developments in the past 30 years as a background, we reach the present-day picture. We have pointed out that compared with a very few years ago there is a marked decrease in the amount and severity of illness among children, and that not only is the graduate of recent years far better prepared to meet the medical problems of children but in addition there has been an enormous growth of specialists who limit their work to pediatrics. We must keep clearly in mind that as a result the American child of today is a much better physical specimen than he was 30 years ago and receives infinitely better care and attention. Any changes in the trends of medical practice must not be of such a nature that this improvement is jeopardized or in fact fails to continue. I emphasize this because two trends give rise to a serious question as to whether or not pediatric practice will continue in the same way as it has in the recent past. One trend is the decrease in the child population with approximately one-half of it in the medical indigent group, and hence from the important economic side of medicine, as it has been practiced in the past, not a source of remuneration to the physician. Fair remuneration to the physician for his work is an essential for good medical care. The other trend is the acceptance of the idea that the health of the child is a responsibility of the state somewhat analogous to the way that education has been a responsibility since the foundation of our nation. I can see no way in which the premise that if the American child is entitled to an education he is entitled to health can be refuted.

Much of the improvement in child health comes from the scientific development of medicine with a strong accent on the preventive side, for pediatrics has been the field in which preventive medicine has been most highly developed and applied. Without going into detail, or attempting in any way a complete list, it is but necessary to mention the results of preventive medicine in infancy and childhood in such conditions as the avitaminoses, diphtheria, tuberculosis, and the summer diarrheas. The wards in our children's hospitals today present quite a different picture from those of 20 or even 10 years ago, and as a teacher I can testify to the difficulty at times to find material to illustrate conditions quite common a few years ago.

In the practice of pediatrics the preventive side looms large, and this with the acute infections of the upper part of the respiratory tract forms the large bulk of the average practice. It is in this preventive phase of medicine, as a number of studies have shown, that the general practitioner has fallen behind and has failed to keep abreast of his opportunities and, in fact, obligations. I refer not only to such matters as immunization procedures, where state medicine has necessarily and quite rightly stepped in to some extent, but to the failure of the physician to interest himself in the child as an individual, his growth, his environment and the problems arising from it, educational and school problems which may seriously affect the health, parental attitudes, and the like, for it is here that preventive medicine plays as important a rôle in the child's well-being as in the matter of specific disease prevention. It is just this factor which has led so many of the children in our large cities, and steadily more and more in the smaller communities, to pass from the hands of the general practitioner to the pediatrician.

Validity of Pediatrics as Special Field

It is difficult to maintain the position that there is something so different, so unique in etiology, pathology, and therapeutics, that differentiates pediatrics from the rest of internal medicine. Many of my associates agree that it is only the child who makes pediatrics valid as a special field, and that we are nothing more nor less than general medical practitioners who have a special interest in the developing growing organism we term the child.

Within the past decade, perhaps as disease has decreased and we have had more time to consider it, there has been a growing interest in what may be termed the mental hygiene of the child, the psychogenic and habit troubles which seemingly are on the increase, or perhaps are only more apparent since we have become interested in them. Today not only in private practice but even in our children's hospitals, where as a rule only serious medical conditions are found, the psychologic factors of health are considered of the greatest importance in dealing with children. Here, as in the more strictly medical phases, prevention is infinitely more important than cure. While discussion continues as to where the pediatrician steps out and the psychiatric specialist steps in, there can be no argument but that the physician who looks after the baby and young child in the home is the only person so situated as to apply preventive measures, and to treat minor maladjustments before they have become so fixed that they influence the child's personality.

So, as one phase of pediatrics begins to limit itself another opens up. Our medical schools have not as yet kept pace with the practitioner in these matters, but a decided change has been taking place in the past 5 years. It is another example of how the demands of practice have influenced medical teaching and research rather than pediatrics being the outgrowth of increased medical knowledge. There is much need of our schools and clinics developing this field, as considerable discipline is necessary, and this can only be brought about by the scientific approach in studying methods and problems.

Another recent development in pediatrics is the extension of the age period covered to include adolescence, a much neglected period from the medical standpoint, because it is the period of the life cycle with the lowest morbidity and mortality. It is a logical extension, as it is a part of the period of growth which we have come to regard as the essential basis of pediatrics. Certainly the scope included has gone a long way from the stage of only a few years ago when the predecessor of the present-day pediatrician was known as the "baby feeder."

It is difficult to discuss the social and economic phases of present-day pediatrics when only general statements can be made and explanatory discussion must be omitted. It seems to me that we can consider certain things as elemental and incontrovertible. First, not only from a humanitarian but also from the standpoint of national welfare and survival, every child is entitled to good medical care. Second, good medical care costs money, and due to the developments of medical science, the cost has been steadily increasing during the 30 years in which pediatrics has been developing so rapidly. Third, it is true beyond question that for geographic and economic reasons good medical care is not available or being furnished to many thousands of American children. It is further true that even when good care is available many children fail to receive it because of the ignorance or apathy of their parents, and even to some extent because of the lack of interest on the part of physicians. Fourth, such changes are indicated in medical practice or organization as will assure good medical care for all children.

It is this last statement that leads to the discussion, and honest discussion is needed and essential. The discussion is not in regard to the fact of the statement, but to the methods which are to be employed, the character and extent of the changes that must be made, and here there has been much difference of opinion. I am at times disturbed over the emotionalism that has resulted over this matter in the past few years, the lack of honesty and clarity of discussion, the confusion between theory and fact, the vast mass of falsities, personal animosities, vituperation, and propaganda that has arisen. Such vague catch phrases as "socialized medicine" and "state medicine" have been a source of endless argument, although I have never yet found two people talking about the same thing when they discuss these two phrases.

I have never encountered anyone, excepting perhaps an ideologic communist, who has advocated or proposed that medicine be solely a function of government in the United States, and as far as "state medicine" is concerned, whatever one may mean by that term, we have always had state medicine to a certain extent. The licensing of the right to practice medicine under which we all carry on our work is a right granted by the state under laws enacted by laymen, and our municipal and state institutions for the sick and those mentally ill, as well as our local, state, and national health services, are accepted examples of state medicine. Unless conditions have changed from what they were 30 years ago when I cared for the so-called "senatorial" cases as a hospital resident, there has been more state medicine in Pennsylvania with its legislative subsidies to private institutions than in any other state I am familiar with. It is time—perhaps now with our emotionalism finding other outlets it will be easier—that we discuss these matters sanely and without rancor, and that we as physicians approach them with the same scientific attitude of mind with which we discuss technical medical affairs.

I have been interested in, and somewhat involved, in these matters, as so many have had their origin in and centered about the field of pediatrics, and the pediatricians as a group have at times had an attitude quite at variance with what is loosely called "organized medicine." For example, in 1922 the Section on Pediatrics of the A. M. A. passed a resolution approving the Sheppard-Towner Act, while at the same meeting the House of Delegates passed a resolution opposing it, an attitude that a few years later was changed and that of the pediatric group endorsed. These differences in opinion were among the reasons which led to the formation 10 years ago of a strong organization of pediatricians, one of the fundamental purposes of which was a forum for the expression of the opinion of pediatricians on matters directly related to the health of children, a matter in which they rightly consider they have a much greater interest and knowledge than an elected group of physicians with but a small fraction, and those by chance, having any particular interest in the child.

It is not because I desire to enter into the moot subject of medical economics that I am discussing these matters, but because the picture and position of pediatrics today is perhaps linked closer with the social and economic phases of medicine than any other field. What I have said and still have to say is naturally my own personal viewpoint and opinion, but in a general way I know it reflects the attitude of many with whom these matters have been discussed. Medicine must be kept a dynamic thing as it has been in the past, and there must be continuing improvement in the medical care of children as there has been in the past. This involves not only production (medical science) but distribution (medical practice).

We have problems of distribution in medicine somewhat analogous to the unsolved problems of the distribution of commodities, where we find the wheat bins of the midwest overflowing, and many American citizens for one reason or another on a mere existence diet. No one knows the answer, and we must proceed to make changes in an evolutionary manner, not by a radical upheaval, lest all the splendid good that medicine has accomplished be jeopardized. We must have experimentation, and we must be interested in and tolerant of experimentation and maintain a scientific attitude toward it. If better medical care for children can be obtained through some insurance scheme or other method of distribution of medical costs, I am for such a plan, but I have little respect for the opinion of those who categorically affirm or deny the beneficial results of such a method without trial.

If better medical care at a lower per capita cost can be obtained by some method of group practice, then some such type of organization is desirable and is bound eventually to develop. I am of the opinion that no one method or plan for extending medical service to children can be devised which is suitable for all parts of our nation with its vast regional differences in density of population, economic status, and industrial conditions. It may well be that for economic or geographic conditions increased governmental participation may be the only means of improving medical care in some localities and situations.

I am aware of the potential dangers of political interference with the practice of medicine, and the danger of such interference lowering medical standards and placing medicine in a position where the progress of medical science which leads to improved care will be slowed. In any plan or program it is essential that the technical side of medicine be safeguarded. My philosophy about government, at least as we have had it in the past, is that in a democracy government is ourselves, and if we fail to get good government the fault is chiefly our own.

Pediatrics and Medical Economics

I am also aware of another political danger, a danger within the medical profession itself. It is the slow building up by some for selfish motives of a labor union attitude in which we are expected blindly to play "follow the leader." This has been done by falsely presenting issues, by the dishonest use of the medical press for propaganda, and the presentation to the profession of only one side of debatable economic subjects, even by descending to unfair and uncalled for personal attacks on those who differ from those in control. It is a political danger from within as dangerous as political danger from without. Do not mistake my meaning. I am speaking of a danger and a tendency that have been developing in certain circles in the past few years, and no one has more respect than I for the many hundreds of medical men who have unselfishly worked without thought of personal gain in their local, state, and national organizations for the highest and best ideals of medical service. We must be careful lest, as has happened in other organizations, those who are paid to carry out the policies of an organization work themselves into a position where they dictate and control the policies.

There are many problems connected with the present-day situation of pediatrics which directly or indirectly involve medical economics. For example, one is the tendency for our children's services, for hospital efficiency, to utilize their material for the graduate instruction of residents rather than for the education of interns. While the medical care of the child in the hospital is better under this development, it may be that it will lead to so many entering the practice of pediatrics as a specialty that the opportunity for successful practice will be lost because of a supply greater than the demand. While these exceptionally trained men will be able to give better care to a limited number of children, the decreasing opportunity for interns to obtain a children's service and experience may as a whole nullify the gains made by the few. It is questions like these that are bothering the pediatricians of today and which from the standpoint of medical practice are important.

I have been extremely fortunate in medicine in two ways. First, entering medicine without the slightest idea of what it was all about, as I was not conditioned by a medical association in childhood, I came under the influence in one way or another of a group of men here in Philadelphia who had the highest ideals of medicine as a profession—among others such men as Charles Fife and Alan Smith—and who influenced me in a way that has charted the course of my medical life. Second, I entered a developing field in its early days and became associated and have grown up with a group of physicians throughout the United States who have had basically one medical interest, the child. It has often been said that we have a closer fraternal bond than exists in any other group, and think and act with a unanimity of opinion and purpose not found in any other field. If this is true, and I believe it is, it is due unconsciously to the one criterion by which we judge any proposed or suggested change or activity in medicine, both technically, as regards organization, and as regards socio-economic problems. Will this improve the medical care and the health of the child? If so, we are for it. Perhaps this after all sums up the spirit of present-day pediatrics and all else fits automatically into the picture.

The Management of Tumor of the Testicle

A Study of 42 Cases

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THE first link in the chain of events that follow once a presumptive or correct diagnosis of tumor of the testicle is made must be forged by the general practitioner. He is the one who invariably sees the patient first and consequently must be impressed with the seriousness of testicular neoplasms. Recent advances in our knowledge of diagnosis and of treatment have made possible earlier recognition and better management. In view of these newer accumulated facts, it is the purpose to present what would seem a logical course to follow in the management of testicular neoplasms. In addition, an analysis of 42 cases of tumor of the testicle from our wards and private service will be reported. It is obvious that the earlier the diagnosis of any tumor the better will be the prognosis. One is impressed in this particular study with the patient's disregard of his testicular swelling and the physician's procrastination after he finally is consulted.

It seems to me that school and college physicians should be thoroughly impressed with the importance of testicular injuries. The industrial surgeon invariably refers this type of injury to the hospital for observation and treatment because of the insurance risk and workmen's compensation laws. Although it cannot be proved that injury causes or predisposes a person to testicular tumor, it nevertheless is a recognizable factor. In any number of instances, the patient's story centers about the injury when he presents himself with a scrotal swelling. The school physician would do well if he would contact the student's family physician in cases of scrotal injury and give him the necessary data so that continued observation might be logically followed. In our series, 20 cases (47.6 per cent) gave a history of injury. A physician should make available to his male patients the same information on tumor of the testicle which he gives the female patient on cancer of the cervix, uterine fibroid, or breast tumor.

Aside from early diagnosis of tumor of the testicle, it is necessary that the patient be given every possible advantage of our accumulated knowledge in order to eradicate the tumor. This entails a responsibility on the family physician because it is fairly obvious that this means well-trained personnel and a properly equipped roentgenologic department. Expert services of a pathologist, a laboratory worker familiar with hormonal investigations, and a radiologist are necessary. The larger general hospitals and clinics are fortunate in having this personnel. Interdepartmental co-operation is of vital importance in obtaining the best results. It is indeed necessary for the surgeon to remember that, in many instances, the proper removal of the tumor is just a step in the management. Criticism on the method of procedure has been heard from both the surgeon and roentgenologist. Within recent years the endocrinologist entered the discussion. The urologist should be in charge of and direct the treatment of tumor of the testicle.

Clinical Features

The age of the patient, character of the onset, the initial symptom, the duration and course of the swelling, the presence or absence of pain, loss of weight, and symptoms relative to the gastro-intestinal or respiratory systems are important points in the diagnosis. The history of injury is noteworthy because, as previously mentioned, it was an inciting factor in 20 of our cases, and a complete clinical evaluation must be made of this factor because of medicolegal necessity if said injury occurs while the patient is at work. The youngest patient in this series was 3 months of age—the oldest, 59 years; the greatest incidence occurred between the ages of

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31 and 40 years, 19 cases, or 45.2 per cent; 8 between 20 and 30 years, 19 per cent; 5 between 40 and 50 years, or 12 per cent; 6 between 50 and 60 years, or 14 per cent; 3 between 15 and 20 years, or 7 per cent. Peculiarly enough, the age of the patient had no appreciable influence on the prognosis or survival period. Factors other than age must be taken into consideration on determining the prognosis (Table I).

TABLE I

TUMOR OF THE TESTICLE*

Age	*No. of Cases*	*Per Cent*
Less than 1 year	1	2.
15-20 years	3	7.18
20-30 "	8	19.04
30-40 "	19	45.2
40-50 "	5	12.04
50-60 "	6	14.2
	42	99.66

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* Right testicle, 22 cases; left, 20.

The character of the onset and the duration and course of the swelling are vitally important both in diagnosis and prognosis. It is interesting to note the variation in time that elapses between the appearance of the testicular swelling and consultation with a physician. If pain accompanies the swelling, the patient will seek advice earlier. Progressive enlargement of the testicle will produce a sensation of weight in the scrotum. Thus, the majority of cases are seen when the tumor is well developed and the patient presents himself not because of the primary growth but rather on account of pain in the back, digestive symptoms, loss of weight, tiredness, cough, and hemoptysis—symptoms indicative of metastases. An attempt was made to correlate the time of onset of the swelling with the correct diagnosis and treatment and survival date. Here, we are apt to get into difficulties because of the variation in the patient's story. In general, however, it is safe to state that in those patients seen within the first 6 months or year of the onset of the testicular enlargement, the percentage of survivals is greater than in those treated at a later period. The prognosis is definitely enhanced in those patients seen early.

One of our patients (C. W., age 27) appeared in the clinic with a history of gradual swelling of the left testicle for a period of 3 months. There was no injury. He was an excellent physical specimen. There was no x-ray evidence of metastases. The Friedman test was reported as negative. The histology of the tumor removed was teratoma. He was given x-ray irradiation postoperatively. He died within 18 months with generalized abdominal and retroperitoneal metastases. On the other hand, case M. M., age 59, with knowledge of a right testicular swelling for 6 years and repeated tappings for hydrocele on the same side, lived 9 years after a malignant teratoma was removed. The clinical histories of tumors of the testes are interesting, but care must be taken to analyze the facts in predicting a prognosis (Table II).

It is also interesting to note that in this series there were 2 cases whose initial symptoms were cough and hemoptysis. In one case a right pneumonectomy was performed because the tumor in the chest appeared as a sharply demarcated rounded mass in the region of the right middle lobe of the lung. The pathologist reported the growth as adenocarcinoma of the lung, suggestive of the teratomatous type; the histology of the testicle was embryonal carcinoma (teratoma). The patient, who was only 19 years of age, knew he had an enlarged right testicle for at least 3 years, but he sought his physician's advice because of a cough, hemoptysis, and loss of weight, which had been developing 4 months prior to admission to the hospital. The Friedman test was negative. He lived 6 months.

A similar case (P. A., age 35) was admitted to the service of Dr. Louis H. Clerf with a diagnosis of tumor of the lung. He also had a right testicular tumor. Deep roentgen therapy was instituted, but the patient's physical condition prevented intensive treatment. He died within a month. The histologic diagnosis was chorionepithelioma of the testicle, metastatic tumors of the lungs, liver, kidneys, and lymph nodes (mediastinal and abdominal). The Friedman test was positive. His only symptom was hemoptysis for about 9 weeks previous to admission into the hospital. This patient recalled an injury to the groin at the age of 15 years followed by a swelling of the right testicle. He had a neisserian infection at the age of 22 years, but there were no complications. At the age of 27 years he had a complete physical examination previous to

TABLE II

Initial Symptoms	*No. of Cases*
Enlargement of testicle	30
Sensation of weight in scrotum	12
Pain (testicular—cord—back)	18
Gastro-intestinal distress	7
Tiredness	1
Loss of weight	2
Injury to scrotum or groin	5
Cough	2
Hemoptysis	2
Phlebitis	2

Outstanding symptoms—mass associated with or without local or radiating pain and sensation of weight.

marriage. He was rather positive that the swelling of the right testicle appeared 8 weeks before admission to the hospital, that the enlargement was rapid, and was accompanied by pain. Remedial measures to the testicle caused the swelling to increase. In this particular case, the hormone studies indicated a highly malignant metastasizing tumor.

Diagnosis

Consideration of the clinical history, as pointed out, is important in diagnosis. The patient presents himself with a mass in the scrotum, large or small, not necessarily painful but generally causing some discomfort. It does not transmit light but gives a peculiar sense of weight. Variability in the size of the swelling is common. It generally is smooth in outline but may be bosselated. It is readily recognized that repeated palpating and squeezing should be avoided. The danger of inducing cell migration into the lymphatics and blood stream by frequent examinations is greater than the procedure of orchidectomy, taking for granted that this operation is properly done. Roentgen investigation for evidence of metastases is not to be overlooked. This particularly includes a roentgenographic examination of the chest and an intravenous urogram. This latter study will often reveal evidence of retroperitoneal metastasis by the variations in the relations of the upper urinary tract. Peculiar displacements of the kidneys or ureters or obstruction of the ureter are important signs if they cannot be otherwise accounted for. As a matter of practical importance, if a gastro-intestinal study is made, the intravenous urogram should precede it to obviate any confusion which often results because of retained barium in the intestinal tract.[8]

Differential Diagnosis

It should not be necessary to review all the various types of scrotal masses which may be confused with a testicular neoplasm. Textbooks and numerous recent articles give this differentiation in detail. In this series one patient had a positive Wassermann reaction. The possibility of gumma of the testicle was considered, but orchidectomy was done and a malignant teratoma was reported. A careful history will often aid in this regard and antisyphilitic treatment may be instituted to note whether there is any change in the mass. The hormone test is an additional diagnostic aid that may serve to clear doubtful cases. Tuberculosis of the genital tract is sometimes confused with testicular neoplasms. It seems to me that if the usual careful study is made, tuberculosis can be ruled out. The complication of an accompanying hydrocele with a tumor of the testicle presents a different problem. The danger of tapping the hydrocele to facilitate palpation of the suspected tumor of the testicle must be recognized. Personally, I would be inclined to condemn it. If repeated examinations and squeezings of a tumor of the testicle are to be condemned, then sticking a needle in a hydrocele in suspected tumor is equally dangerous and possibly more so. Five cases in this series were tapped, several repeatedly, for hydrocele, but finally had an orchidectomy. I cannot say whether tappings influenced the prognosis, but none of these patients are living today. The dangers are numerous, many of the hydrocele sacs are thick-walled, bleed readily, and a resultant hematocele is quite common. Certainly, in view of our knowledge today, it is better practice to expose the testicle by incision of the scrotal sac.

The Significance of Hormone Studies in the Diagnosis of Testicular Tumors

Present Status.—It has been more than 10 years since Zondek discovered that the urine of men with certain malignant testicular tumors, particularly the chorionepitheliomas, contains sufficient gonadotropic hormone to give a positive "pregnancy" test. In the intervening years this observation has been confirmed many times, but also so many exceptions have been noted that the diagnostic value of the test is in a state of confusion. A positive Aschheim-Zondek reaction has been obtained in testicular tumors which do not have the morphologic appearance of chorionepitheliomas, and undoubted cases of malignant embryonal testicular tumors have failed to give a positive test.

In our present state of knowledge only this fact remains unchallenged—that the demonstration of a huge increase in gonadotropic hormone in the presence of a testicular swelling is of diagnostic value. Negative tests do not indicate with certainty that an equally malignant tumor is not present. The demonstration of smaller increases of gonadotropin may be of tremendous significance, but must be interpreted with caution, since they may also be found occasionally in pituitary hyperfunction or disease.

Since the demonstration of an increase in gonadotropic substances is the factor of significance as far as laboratory studies are concerned, it behooves us to employ as accurate a test for its demonstration as is possible, and to establish reliable norms.

In normal men the concentration of this hormone in the urine or in the blood is very small. Ordinarily we are able to obtain only 2 to 8 mouse units in the 24-hour specimen. This may be increased occasionally to 32 mouse units, especially at the "climacteric." In the blood the concentration of the hormone is usually too small to be demonstrated by ordinary methods.

Unfortunately, the tests which are usually employed for the diagnosis of testicular tumors are not very sensitive. Frequently, only the ordinary "pregnancy" tests—the Aschheim-Zondek or Friedman tests—are employed. These detect only relatively large quantities and are not at all quantitative. More recently the necessity for making more accurate studies has been emphasized by a number of investigators including Ferguson,[1] Hinman,[3] Fortner and Owen,[2] McDonald,[4] and others. The tests which may be used for this purpose and their relative values may be outlined as follows:

Friedman Test.—Although this is probably the most frequently used laboratory test routinely employed in this country for the diagnosis of malignant testicular tumor, it is the least sensitive of the available hormonal tests for gonadotropic hormone. A relatively great increase of the gonadotropic substances must be present in the urine before a positive test can be obtained. Employing the usual technic, a positive test indicates that there is at least one rabbit unit in 10 to 20 c.c. of the urine. This is approximately equivalent to 2500 mouse units in the 24-hour specimen. In other words, approximately a hundredfold increase over the normal concentration of the hormone is required before a reliably positive test may be obtained. Furthermore, the Friedman test is read by gross inspection of the rabbit's ovaries. In some cases considerable enlargement of the follicles may have been produced and yet this could not be recognized by gross inspection.

On the other hand, the Friedman test has this to commend it: If positive, it is unequivocal, indicating the presence of a huge increase of the hormone in the urine. Even when positive it is not possible to state how great the increase is, unless the test is done with various dilutions of the urine.

Aschheim-Zondek Test.—In many institutions this test still remains as a routine procedure for the diagnosis of pregnancy. In many respects it is more satisfactory than the Friedman test for the diagnosis of testicular tumors. Employing the usual technic it is somewhat more sensitive than the Friedman test in that it will respond to lower concentrations of the hormone. A concentration of approximately 500 mouse units in a 24-hour sample will give a positive test.

TABLE III

DURATION OF SYMPTOMS

Age	*No. of Cases*	*Living*	*Dead*
Under one month	4	2	2
1-3 months	5	3	2
3-6 "	7	4	3
6 months to 1 year	6	3	3
1-2 years	4	2	2
2-3 "	5	0	5
3-4 "	3	1	2
4-5 "	3	0	3
5-10 "	3	0	3
10-15 "	1	0	1
15-20 "	1	0	1
	42	15	27

Seen within one year	*Living*	*Dead*
22	12-54%	10-45%
Seen after one year or more		
20	3-15%	17-85%

Where this test is employed its sensitivity and significance may be increased by making histologic sections of the ovaries. In this manner it is sometimes possible to distinguish between 2 reactions:

Reaction (1): This consists of enlargement of the follicles and is produced by prolan A—the follicle-stimulating hormone.

Reaction (2): Production of corpora hemorrhagica and corpora lutea. This is attributed to prolan B or the luteinizing hormone.

The production of corpora hemorrhagica and corpora lutea, the prolan B reaction, is of considerably more significance than simple enlargement of the follicles since the former are characteristic of the hormone produced by chorionic tissue (chorionic gonadotropin). The value of reaction (1), however, is not to be underestimated. It definitely indicates the presence of an excess of gonadotropic substances and may be the forerunner of a more complete reaction at a later date. Ehrhardt and Breitenbach[5] have noted the presence of reaction (1) in 6 instances of malignant testicular tumors.

Some comment concerning the confusion which exists in the literature with regard to prolan A and prolan B reactions is necessary. A considerable number of authors state that the urine should be assayed for prolan A, while others indicate that prolan B is tested for. As a matter of fact, no such sharp distinction can be drawn since at the present time it is not possible to separate these 2 factions accurately; furthermore, there is considerable overlapping of the type of reaction produced. Undoubtedly, luteinization is of more significance than only enlargement of the follicle, although the latter is of significance.

Quantitative Assays

Urine.—Unquestionably the most accurate method of detecting an increase in the excretion of gonadotropic substances is to extract the entire hormone content from a 24-hour urine specimen and to make a quantitative biologic assay. This may be accomplished by precipitating the gonadotropic substances in an acidified 24-hour specimen with 4 volumes of alcohol. This is permitted to stand in the icebox overnight. The precipitate is collected by centrifugation and purified by washing with ether. The gonadotropic hormone is then extracted with a buffer solution, and the hormone is assayed by the Aschheim-Zondek method. For the end point the ovarian reactions or the uterine weights may be employed. Where a large number of animals are used, the latter is more accurate.

Serum.—Where there is any appreciable increase of the hormone, it can generally be readily detected in the serum by the Aschheim-Zondek method. A total of 4.5 c.c. of serum from normal men will produce no reaction in the ovaries of infantile mice. In the presence of malignant testicular tumors, strong positive reactions may be obtained with as little as 0.1 c.c. of serum. By determining the least quantity of serum which will produce corpora hemorrhagica or corpora lutea, a quantitative assay can be made. This is especially valuable in the follow-up of these patients.

Observation of 22 Patients With Malignant Testicular Tumors

Friedman Test.—Our own results with the Friedman test in 22 patients with malignant testicular tumors are particularly discouraging. A positive reaction was obtained in only 2 of the 22 patients. Both of these had embryonal carcinoma of the chorionepithelioma type with extensive metastases. Among the 20 patients who had negative Friedman tests, an embryonal carcinoma was present in 17 cases with metastases in 10. Although it is not our purpose at this time to enter into a discussion of the histologic differentiations, it might be stated that at least in a number of cases with negative tests the histologic characteristics of the tumors appeared to be identical with those associated with positive Friedman tests. It would be a matter of the greatest interest if some correlation, such as has been attempted by Ferguson, Hinman,[6] and Powell,[7] could be established between the histologic picture and the excretion of gonadotropic hormone in these so closely similar instances (Table IV).

Table IV

Friedman Tests in 22 Malignant Testicular Tumors

No. of Patients	*Type of Tumor*	*Metastases*
Friedman Test Positive		
2	Teratoma (chorionepithelioma)	Present in both
*Friedman Test Negative**		
20	Embryonal carcinoma 17	Present in 10
	Seminoma 2	None
	Unclassified 1	None

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* Friedman test became positive in 2 after orchidectomy.

Quantitative Assays.—The fact that a Friedman or Aschheim-Zondek test was negative in such a high proportion of cases does not mean that the gonadotropic hormone was not increased in these patients. We have one such instance in the present group of patients in which the Friedman test was negative but the quantitative serum "prolan" was 33 M.U./100 c.c. This patient died shortly thereafter with widespread metastases of an embryonal carcinoma. This case definitely indicates the superiority of quantitative studies over the Friedman test. It also indicates, however, that even in tumors which produce the hormone the quantity of prolan is not an indicator of the prognosis or the extent of metastases, for in this case the patient survived for only a few months, while in a similar instance in one of our patients as much as 1000 M.U. was demonstated in 100 c.c. of serum.

If the tumor is associated with large quantities of prolan, and there is a diminution of the hormone following the x-ray therapy, is this a reliable indicator that the tumor is radiosensitive or that there is a favorable prognosis? Certainly such was the original belief and this constituted the strongest argument for frequently repeated quantitative assays. Discordant notes, however, have been struck even in this respect by several reports indicating that extension of metastases occurs despite diminishing prolan concentrations. Perhaps this may indicate some change in cellular physiology as a result of irradiation. We have no complete direct observations on this score. We can only state that in patients with highly malignant testicular tumors of the chorionepithelioma type the hormone assays vary tremendously.

Histology

In view of our accumulated knowledge on these tumors, the histologic slides were reviewed in an effort to correlate the picture with the hor-

Table V

Quantitative Prolan Studies

Patient	*Diagnosis*	*Friedman Test*	*Quantitative Prolan*
P.A.	Embryonal carcinoma with metastases; died	Positive	Serum: 1000 M.U./100 c.c.
T.D.	Embryonal carcinoma (chorionepithelioma)	Negative	Friedman test negative in dilution of 1:5
M.S.	Embryonal carcinoma with metastases; died	Negative	Serum: 33 M.U./100 c.c. (after removal of lung and testicle)
E.S.	Testicular tumor with metastases—type?	Negative	Serum: Less than 33 M.U./100 c.c.
W.L.	Embryonal carcinoma; no evidence of metastases	Negative	Urine: None demonstrable
L.A.	Embryonal carcinoma (very early)	Negative	Serum: None demonstrable 8 M.U./24 hours.

mone studies. Twenty-two cases had hormone tests (see Table V). It is readily recognized that the more embryonal the tumor the greater is the excretion of the gonadotropic hormone. As they become more differentiated and adult in type, less and less of the hormone is formed. Therefore, the correlation of the histologic picture and the hormonal evidence is valuable only when considered with the clinical features. In this series the histologic classification is as follows: Teratoma (chorionepithelioma), 2 cases; adenocarcinoma, 3 cases; differentiated with carcinomatous elements, 4 cases; embryonal carcinoma (teratoid), 26 cases; seminoma, 5 cases; unclassified, 1 case (Table VI). Realizing the confusion in histologic classification of testicular tumors, I have followed the reports made by the late Dr. Baxter L. Crawford and Dr. Carl J. Bucher.

Table VI

Histology

	No. of Cases
Chorionepithelioma (teratoma)	2
Adenocarcinoma (teratoma)	3
Teratoma with carcinomatous elements	4
Embryonal carcinoma	26
Seminoma	5
Unclassified	1
	41

In the large group of embryonal carcinomas there were many variations in the cellular structure. In others there were no marked variations in the cell type observed. The true mixed cell teratoma was rather infrequent. In a number of cases one would see rather large round cells of the seminoma type and characteristic areas in which there were cells of the lymphoid type in the stroma. In conclusion, it is noted that more thorough study of the histology is necessary before we can begin to rely on our hormonal evidence to predict the clinical course of the patient.

Treatment

That there is still some argument as to the proper procedure in the management of a malignant testicular tumor is evident from many reports in the literature. It should, however, resolve itself into 3 main groupings: (1) preoperative x-ray irradiation followed by orchidectomy in 4 to 6 weeks, and then postoperative irradiation; (2) orchidectomy with postoperative irradiation; (3) irradiation alone. All 3 methods have their adherents and opponents. Insofar as cures by irradiation alone are to be questioned, we need not discuss it. It is readily recognized today that when irradiation alone is employed, it is done in cases of demonstrable metastases and therefore only palliation of symptoms is expected. In this series, 3 patients received x-ray irradiation alone and died shortly thereafter because they were unable to tolerate sufficient x-ray dosage to be of any therapeutic benefit. It is to be remembered that in order to obtain the best results from x-ray irradiation the patient must be kept in as good physical condition as possible. This must be borne in mind particularly when irradiating patients in groups (1) and (2). The blood picture must be maintained at as high a level as possible. Blood transfusions are useful, together with iron and vitamin products.

We are mainly interested in those patients who do not reveal any demonstrable metastases. In the first group, viz., those with preoperative and postoperative irradiation with orchidectomy, there are a number of problems which are disconcerting. If faith is placed in the hormone studies, it is said by many that in cases with a high hormonal excretion the possibility of metastases is greater, even if they cannot be demonstrated by roentgen investigation, and, therefore, this type of case should receive preoperative irradiation. One must be careful in evaluating the possibility of hidden metastases by the amount of hormonal excretion. As stated before, the size of the primary tumor and the his-

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In one case an autopsy was not obtained, but there was clinical and radiologic evidence of metastases.

tologic picture are definite factors in hormone studies—the larger the tumor and the more embryonic and undifferentiated the cellular structure, the greater is the hormone excretion. Certainly we cannot follow this line of reasoning unless the tumor is removed and studied.

The proponents of preoperative irradiation divide themselves into 3 groups. One group believes in irradiation from the neck and shoulders to and including the primary tumor; the second group limit themselves to the abdomen and the testicular tumor; and a third group advise massive doses to the primary tumor alone. If, for some reason or other, this procedure is selected by the surgeon previous to the removal of the tumor, I would think that a course of irradiation as complete as possible should be decided upon, namely, from the neck to the extremities. Then the orchidectomy could be done in 4 to 6 weeks after the irradiation, immediately followed again by irradiation, the extent and dosage to be decided upon by the radiologist. Hormone studies are to be carried out after such a course of treatment over a long period of time, if the patient survives. Needless to say, irradiation is continued at intervals depending upon the continued good health of the patient and resultant hormone tests.

The second group has the greatest number of adherents. This is explained by the following facts: First, despite the arguments of the proponents of the preoperative irradiation procedure, their results over a period of years are not appreciably any better than without preoperative irradiation. Second, numerous outstanding radiologists do not believe in prophylactic roentgen irradiation. Third, many prominent urologists are opposed to preoperative irradiation, mainly on account of the danger of repeated manipulation of the primary tumor and their belief that in the absence of demonstrable metastases there is no proof on hand that an immediate and proper orchidectomy induces the danger of metastases; also, irradiation before operation is apt to change the cellular structure of the tumor and thus confuse its proper classification. Fourth, accidental irradiation of the good testicle may result in sterility. This may occur even in postoperative irradiation, but screening of the good testicle is better accomplished when the tumor is absent. Fifth, in view of the above-mentioned reasons, many surgeons in outlying areas who do not possess the advantages of modern roentgenologic equipment will effect an orchidectomy and refer the patient to the city for irradiation. In view of the foregoing facts, one can hardly criticize this procedure if the surgeon appreciates the seriousness of his problem and will fully acquaint the patient of the necessity for further treatment and continued observation.

Remarks on Surgical Procedure

Ten years ago it was common to read and hear that the treatment of testicular growths was essentially surgical. They went further and stated that bold and radical surgery was indicated, and if they were not equipped to follow such a course the case should be surrendered to more competent hands. Today, we qualify this statement somewhat and recommend radical procedures in selected cases only. The adult teratoma, when removed, offers the best prognosis surgically, as it is resistant to irradiation and the gonadotropic hormone is never present. Early diagnosis and immediate orchidectomy offer the patient the best chance of cure.

The proper procedure to follow is to remove the testicle with the spermatic cord by a high inguinal incision, clamping and severing the cord, preferably with the cautery knife. The tumor is then freed by blunt dissection and delivered through the inguinal incision. This essentially is the operation carried out today. The more radical procedure of removing the retroperitoneal lymph chain necessitates the extension of the high inguinal incision upward along the margin of the rectus and outward to the eleventh rib, freeing the posterolateral abdominal parietes of peritoneum, and exposing the ureter retroperitoneally as in the case of stone of the ureter; stripping of the peritoneum is continued until the deep abdominal vessels are reached. For details of this procedure, one is referred to suitable works on the subject. I have assisted in the radical operation of removal of the deep lymphatic chain of nodes only twice. One patient lived 7½ years after operation; the second died in one year and 2 months. Within recent years it is the exception rather than the rule to see or hear of this procedure being done. Despite all reports to the contrary, it is a very difficult piece of work. The majority of cases in our series had early orchidectomy followed by irradiation —32 cases, or 76 per cent (see Table VII). It will be noted that 12 are living and 20 are dead.

Prognosis

Embryonal tumors of the true teratoma type (chorionepithelioma) are extremely malignant and offer a poor prognosis. When these patients are seen, metastases are often demonstrable. A teratoma not of the embryonal type offers a better prognosis; the adult type of teratomas and the seminomas are in this group. In our

TABLE VII

SUMMARY OF TREATMENT

	No. of Cases	*Living*	*Dead*
X-ray irradiation alone	3	0	3
Orchidectomy with preoperative and postoperative irradiation	7	3	4
Orchidectomy with postoperative irradiation	32	12	20
	42	15–35.7%	27–64%

series, one is living and well 8 years and another 4 years. The majority of embryonal carcinomas in our series responded to irradiation and offered a better prognosis, but if observed and followed they appear to live an average of 3½ to 5 years after operation. This is the group that Hinman says affords the best prognosis, as hormonal excretion is low, and the patients, as a rule, respond well to irradiation (see Table VII).

Follow-up Treatment

This phase of treatment tells the story. I have investigated 42 cases and obtained complete records. Three cases in this series are comparatively recent, within one year. Histologic records have been reviewed in 41 cases; one patient died in the hospital with the primary tumor and metastases; no autopsy was granted. Data was obtained from the Bureau of Vital Statistics of 5 different states. Seven cases were not included in this study because of incomplete data and histologic proof of a testicular tumor was missing.

It is interesting to note that many of the patients do well after removal of the tumor and irradiation for several years. Then the general health picture changes radically. Most frequently they complain of gastro-intestinal distress with pain in the back—definitely clinical symptoms of metastases. Frequently, masses are palpable usually in the upper abdomen; irradiation is the only remedy and the patients are kept fairly comfortable for a variable period of time, depending upon the response of their general physical condition. The palpable masses disappear. Lung metastases, if present, melt away with irradiation. The metastases return and irradiation is again employed. This type of treatment is continued until the patient succumbs. Radical surgery is useless when metastases are observed clinically. When the hormonal test remains or becomes positive after orchidectomy, in the absence of demonstrable metastases irradiation is the only recourse to treatment—if the histologic picture suggests radiosensitivity of the tumor. Several tables are presented that reveal the results of treatment in this particular series. Each table is self-explanatory (Tables VII and IX).

TABLE VIII

PERIOD OF SURVIVAL OF 27 CASES AFTER TREATMENT

	No. of Cases	
Under one year	7	1 case with preoperative and postoperative irradiation; histologic evidence of tumor cells along the cord
1-2 years	3	
2-3 "	5	2 cases with preoperative and postoperative irradiation; metastases
3-4 "	4	
4-5 "	3	
5-6 "	3	Preoperative and postoperative irradiation; palpable metastatic mass in abdomen
6-7 "		
7-8 "	1	(Radical operation)
8-9 "		
9-10 "	1	
	27	

TABLE IX

LIVING AT PRESENT DATE

Name	*Age*	*Date of Operation*	*Status*	*Hormone*
C. H.	43	12/27/38	Living and well	
A. M.	22	4/12/30	Living and well	
R. F.	25	10/26/31	Living and not well	
E. P.	38	8/23/32	Living and well	Negative Friedman
M. B.	39	7/11/32	Living and well	Negative Friedman
W. L.	31	7/10/34	Living with metastases	Negative Friedman
E. P. O.	34	12/18/35	Living and well	Negative Friedman
E. K.	37	7/27/36	Living and well	Negative Friedman (1940)
C. C.	40	5/26/36	Living with metastases	
L. K.	42	11/27/36	Living and not well	
P. M. G.	31	11/24/36	Living and not well	No demonstrable metastases
M. C.	59	7/27/37	Living and well	
A. S.	22	9/12/39	Living and well	Negative Friedman (1940)
S. L.	17	3/12/40	Living and well	Negative Friedman
B. A.	45	5/21/40	Living and well	Negative Friedman

In reviewing Table III, it is interesting to note that 22 cases were seen within one year after the onset of symptoms; 12 or 54 per cent are now living and 10 or 45 per cent are dead.

Whereas 20 cases were seen after one year or more, 3 or 15 per cent are living and 17 or 85 per cent are dead. Although a number of patients were seen early, a diagnosis made, and proper treatment instituted, the survival period was comparatively short. In other words, the histologic structure of the tumor plays a dominant rôle in prognosticating the future of the patient. Each case apparently is a law unto itself. Hormonal evidence in prognosis was indeed disappointing. Relative to Table VIII, it will be noted that 7 patients died within the first year of treatment. Poor response to irradiation and a breakdown in the general health picture accounted for the high number of deaths in this group, due to the type of tumor and metastases to the abdomen and chest. Table IX reveals data on those living to date. Repeated hormone studies were made on numerous patients in this group. Three cases received preoperative and postoperative irradiation; the remainder, or 12 cases, had immediate orchidectomy followed by irradiation. Five patients are not well, 2 with demonstrable metastases, one in whom metastases are suspected but not proven.

Summary

It is difficult to outline an ideal course of management in tumor of the testicle. I must confess that, at the present writing, I cannot agree with the proponents of preoperative x-ray irradiation therapy in every case of tumor of the testicle. On the other hand, are we in a position to deny these unfortunate patients any possibility of aid that preoperative irradiation may afford? In our clinic it is the practice to recommend immediate orchidectomy, then employ irradiation.

In the first place, it is our duty to constantly warn the public and physicians of the seriousness of all scrotal swellings or testicular enlargements. Every case should be considered potentially malignant until proven otherwise. Injury to these parts must be carefully examined and observed for a long period of time.

Second, a careful history, physical examination, and roentgen investigation are necessary. Be sure to include in the latter study an intravenous urography. Hormone studies must be done by a skilled and well-informed personnel, despite conflicting evidence as to their relative value.

Third, early orchidectomy. Unfortunately, many seem to think that this procedure can be done by almost any one. As stated before, it is necessary to remove the tumor and its cord structures intact. Radical procedures will depend on the judgment of the individual surgeon.

Fourth, a thorough histologic study of the tumor by a competent pathologist. There are very few pathologists who have the opportunity to see many tumors of the testicle because of their comparative infrequency. Classification of the tumor, correlating the histologic picture with the available hormonal evidence, can be done only by those who have a fairly active experience with such cases. Difficulties in this regard must be appreciated.

Fifth, x-ray irradiation to be administered by an understanding radiologist, one who appreciates the seriousness of the problem.

Sixth, we cannot afford to overlook the general health picture of the patient. It is imperative that the patient's health be maintained at a high level. Frequent blood counts are necessary. Anemia must be suitably treated.

Seventh, hormone studies should be continued for a long period of time, as well as frequent roentgen examinations of the chest.

Finally, if one is not equipped or well informed on testicular neoplasms, do not meddle with them.

Conclusions

1. An attempt is made to point out the proper management of tumor of the testicle by emphasizing the need for early recognition, early orchidectomy, the rôle of roentgen irradiation, the significance of hormone studies in correlation with the histologic picture, and subsequent treatment, including a regular physical, roentgenologic, and hormone checkup for metastases.

2. Forty-two cases of tumor of the testicle are reported. Fifteen or 35 per cent are living, the longest 12 years, the most recent 4 months. Five of the living patients are not well; 2 have demonstrable metastases. Twenty-seven or 64 per cent are dead; 7 or 26 per cent died within the first year of treatment; 5 of these patients had evidence of metastases. Eighteen lived for 1 to 6 years, one for 8 years, and one survived 10 years.

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ABSTRACT OF DISCUSSION

Leon Herman (Philadelphia): While holding somewhat different views on certain phases of the subject, I find little just basis for adverse criticism of Dr. Fetter's admirable paper. In Table III you will find ample justification for his anxiety to operate early in these cases. Of all the patients seen within one year of the initial clinical signs of the tumor, which, of course, does not necessarily mean onset of the disease, 45 per cent are dead. Of those seen one year or more after, 85 per cent are dead. This is a striking commentary on the dangers of delay.

Despite the fact that there was historic evidence of testicular injury in 47.6 per cent of his cases, Dr. Fetter rightly cautions against ascribing the neoplasm to such injuries, but again rightly insists that a patient thus injured should be kept under prolonged observation.

Metastatic lesions may give the first clinical signs of a testicular or other malignant tumor, and patients are notoriously unobservant of, if highly solicitous about, the eventual fate of their testicles. A patient recently examined by us on account of marital sterility had bilateral cryptorchidism, but was entirely unaware of his deformity. Testicular tumors may go undiscovered for many months.

Dr. Fetter has discussed diagnosis ably, but has, I think, overemphasized the danger of tapping hydroceles. The danger lies not in tapping the true hydrocele accompanying the tumor, which procedure may be necessary to permit adequate examination, but in tapping tumors when no hydrocele is present. This resulted, in the person of a young physician seen by us in consultation, in implantation of the tumor into the scrotal wall.

In speaking of hormonal studies, Dr. Fetter says, "One fact remains unchallenged, that the demonstration of a huge increase of gonadotropic hormone in the presence of a testicular swelling is of diagnostic value." I think there are other well-authenticated values; certainly, the reappearance of large quantities of the hormone after its temporary disappearance following orchidectomy has real significance. The Friedman test is not entirely without value but almost so, being too little sensitive. While the Aschheim-Zondek test is a more sensitive quantitative procedure, I agree with Dr. Fetter that quantitative assays, especially of the blood content of hormone, are superior but difficult to apply in the ordinary clinical laboratory. If these tests are to yield full value in prognosis, the nature and degree of their characteristic reactions must be correlated with the histologic structure and biologic nature of the several testicular neoplasms. Much remains to be learned in the matter, and a reliable classification has not as yet been furnished us by the pathologists.

I know of no figures justifying the application of radical surgery to testicular tumors, and agree thoroughly with the method of handling these cases advocated by Dr. Fetter. There would seem to be no justification whatsoever for depending upon irradiation alone, although I have one patient whose seminomatous left testicle was removed on Nov. 14, 1933. This patient was subjected to postoperative irradiation, and on Feb. 9, 1934, his urine contained 400 mouse units of gonadotropic hormone per liter. On July 1, 1934, there was unmistakable evidence of a tumor in the right testicle. This was subjected to prolonged irradiation. The tumor disappeared, and the patient remains well.

The usefulness of postoperative irradiation in radiosensitive tumors such as the embryonal carcinomas has been proved conclusively, especially by the Memorial Hospital group. I know of no data indicating the upper level to which these applications should be carried. Some patients respond so badly to irradiation that its use must be discontinued.

Finally, I would call your attention to the fact that the final results in Dr. Fetter's series are as good, perhaps a little better, than in the majority of reported series. Fifteen (35 per cent) of the patients in Dr. Fetter's series are alive, but of the total of 42 cases, 27 (64 per cent) are dead, apparently as a direct result of testicular neoplasms. Of the 15 living patients, 5 are ill including 2 with demonstrable metastases. Of these 15 patients, only 8 were operated upon 4 or more years ago, 3 of them in the 1939-40 period. There are 5 instances (10.2 per cent) of 5-year cures, and 8 (19 per cent) of 3-year cures. It is painful to say that these results are about as good as can be expected with modern therapy.

George W. Chamberlin (Philadelphia): A year or so ago I had the opportunity to review 45 patients with malignant testicular tumors from the service of Dr. Alexander Randall at the Hospital of the University of Pennsylvania.

From this analysis I agree with Dr. Fetter's remarks concerning the value of hormone tests. His findings fit in with our observations. Quantitative analysis of urinary prolan is not very reliable in the diagnosis or prognosis of testicular tumors. If the prolan figure is high, it probably indicates an embryonal tumor. A low prolan figure, however, does not rule out the presence of a malignant testicular tumor. One of our patients with a testicular tumor with abdominal metastasis had only 50 mouse units per liter, as determined by the Ferguson technic. This man was dead 8 months later from extensive, rapidly growing metastasis.

An analysis of the results of treatment in this same series indicated to us that the treatment of choice for patients with testicular tumor is preoperative irradiation followed by orchidectomy. On this point, therefore, I would disagree with the views of Dr. Fetter and Dr. Herman. In our series of 45 patients there were 17 who had delayed irradiation therapy, that is, these 17 patients first presented themselves in our department for treatment because of metastasis. Three of these patients are now living 4 years, 9 years, and 11 years respectively. Sixteen patients in our series had an orchidectomy and shortly after were given irradiation therapy. Nine of these patients or 56 per cent are now living and well 2 or more years. Twelve patients were given preoperative irradiation and had an orchidectomy in approximately 4 weeks after this treatment. Of these, 11 or 91 per cent are now living 2 or more years.

This is only a small series of patients and 2 years is not long enough to tell what is going to happen to these patients who are now living, but at the present time our experience indicates that the best form of treatment for these patients is preoperative irradiation followed by orchidectomy at the proper time.

Francis G. Harrison (Philadelphia): We see most of these patients in the third decade. We have not had much experience with the preoperative x-ray treatment. Our experience probably is unfortunate, because when patients have come to us with a real teratoma of the testicle, they died very promptly within a year and a half or 2 years. We have tried orchidectomy and postoperative x-ray therapy, but it has been our experience that these patients do not live very long.

Dr. Herman: Figures like these are so uncertain in their true value. In the first place, the question of whether the patient has metastasis or not is a very pertinent one. I would not believe it necessarily without a biopsy. Figures like Dr. Chamberlin's are so at variance with the world's experience in these conditions that if his results were the real facts, they would be of such significance that they ought to be broadcast over the world so that everyone would change his methods of treatment. No series of these cases has ever resulted in 10 per cent of recovery. The usual is 5 per cent.

I have a woman patient who came from Baltimore to see Dr. John C. Clark. He opened her abdomen and made a diagnosis of an enormous peritoneal tumor. Dr. Pancoast treated her with x-ray and the tumor disappeared. She has been perfectly well ever since. The other day she appeared again in the hospital. She has a dead kidney on the left side, no doubt destroyed by the x-ray, and a hypernephroma on the right side.

There is a lot that occurs between the diagnosis of a tumor of the testicle and its eventual end, and when people tell me that x-ray will destroy 91 per cent of abdominal metastasis and keep the patient well, it is incredible to me on the basis of anything that can be read in the literature in the world.

George D. Shoup (Philadelphia): I would like to ask Dr. Chamberlin if his technic of administering x-ray therapy is different.

Dr. Chamberlin: In the past we have treated our patients from the left supraclavicular region down to the testicle, giving the first treatments over the areas away from the tumor. I have recently advocated irradiation from the level of the diaphragm down to and including the testicular tumor. Following orchidectomy, treatment can then be given over the mediastinum and supraclavicular area.

In giving this irradiation, it should not be given as a prophylactic dose, but the patient should be treated as though a definite palpable tumor were present. One must therefore deliver a "tumor dose" to the areas in which metastatic tumor cells are prone to develop, namely, the region of the epigastric nodes and the retroperitoneal nodes around the renal pedicle.

Dr. Fetter (in closing): For the past several years we have been hearing so many diverse reports on the postoperative results on the management of testicular tumors that I was interested in learning what was happening to our cases. Numerous reports in the literature on preoperative and postoperative irradiation with orchidectomy have been encouraging. Seven cases in this particular series received this type of treatment. Three are living and 4 are dead. The interesting point is that the 4 who are dead died within the first year after they came under our observation. There are many factors which influence the eventual prognosis in each and every case. One must agree with Dr. Herman, whose experience is outstanding, that one has to doubt many statements that may be published. At the present writing, we cannot be too optimistic on our present methods of management of testicular tumors.

THE KIRKSVILLE COLLEGE

Two years ago the legislature of the State of Kansas ordered a committee to investigate the Kirksville College of Osteopathy and Surgery. The committee's report, dated Feb. 17, 1939, in part was as follows:

1. Concerning the ownership and control of the college, no information was furnished.

2. Concerning the financial resources of the college, no information was furnished.

3. Concerning the faculty, we were told by the dean that there were about 25 full-time salaried teachers and about 25 other part-time teachers.

Of the preclinical sciences, there are 5 which are taught at Kirksville and also in all recognized medical schools. These 5 subjects are anatomy, bacteriology, biochemistry, physiology, and pathology. Using the catalogue figures for student enrollment in the freshman and sophomore years, it is found that the ratio of teachers to students in these 5 departments is 1 to 75. At the University of Kansas the corresponding ratio is 1 to 4.2 and at the University of Illinois 1 to 3.8.

The lack of numbers is no more significant than the lack of training of the faculty. Of the 7 engaged in teaching the preclinical subjects mentioned above, no one has had the kind of training which would be required in any reputable medical school.

Neither medicine, osteopathy, nor any other form of healing can be learned without continuous observation of the sick. The adequacy, therefore, of clinical facilities constitutes one of the most important criteria for measuring the efficacy of any teaching program having to do with the diagnosis and treatment of disease.

The Kirksville school maintains a hospital which is said to contain 60 beds. The Laughlin Hospital, across the street, is a private institution and cannot be counted as a part of the teaching resources of the school.

The student enrollment in the junior and senior years at Kirksville is approximately 300, so that the number of hospital patients available for purposes of instruction is approximately one-fifth of a patient per student.

At the University of Kansas there are 700 patients under the control of the medical faculty and 40 students enrolled in the third and fourth years.

At Kirksville it was stated that during the year there were 170 deliveries, an average of 1.2 per cent per senior student.

According to the class schedule for the current semester, a very large part of the students' time is taken up with didactic instruction and a very small time devoted to laboratory work. This is contrary to the universally recognized principles of scientific instruction.

We saw no evidence of any investigative work being conducted by members of the faculty nor any place where such work could be carried on. We were told that there was no animal house and that no animals were kept by the school except the frogs which were used in the department of physiology; that, when needed, "a dog was brought in from the outside." It is impossible to conceive how pathology and bacteriology can be taught without the use of such animals as rabbits and guinea pigs.

Students do not supply themselves with microscopes. They are furnished by the school. Since we were told that the school owns 175 microscopes, it is obvious that each student could not have one for his personal use. In the laboratory of pathology, we were told that the microscopes were locked up in a closet and we were unable to see them.—*Federation Bulletin.*

Round-Table Conference on the Clinical Significance of Jaundice

THE Round-Table Conference on the Clinical Significance of Jaundice was held Oct. 3, 1940, during the Ninetieth Annual Session of The Medical Society of the State of Pennsylvania at Philadelphia. Dr. Russell S. Boles, Philadelphia, chairman, presided. Dr. Boles was assisted by Dr. Henry J. Tumen, assistant professor of medicine at the University of Pennsylvania Graduate School of Medicine; Dr. John G. Reinhold, chief of the Division of Biochemistry at the laboratories of the Philadelphia General Hospital; Dr. Jonathan E. Rhoads, associate in surgery at the University of Pennsylvania School of Medicine; and Dr. Isidor S. Ravdin, Harrison professor of surgery at the University of Pennsylvania Graduate School of Medicine.

THE CHAIRMAN: I am not going to take any valuable time to present my own personal views. In a very general way I want to remind you, and I think the speakers will agree, that the diagnosis and treatment of jaundice depend on a very careful history and a thorough study of the case in order to determine the exact etiology, or in other words, the type of jaundice with which we are dealing, i. e., whether hematogenous, obstructive, hemolytic, or toxic.

It is not easy to differentiate the various types of jaundice. I am in the habit of telling my students in the Undergraduate School that if they have taken a very careful, complete, and intelligent history, they should certainly have some very accurate diagnostic impressions. *A careful history is probably the most important aid there is in the diagnosis of this condition, as it is in most other problems.* Due attention to details in the history, and constantly keeping in mind the chief complaint of the patient, which should serve as a keystone, should be the chief means of establishing a diagnosis. If we secure a complete history and properly appraise that history, we will immediately have some pretty good impressions as to what our final diagnosis is going to be.

The physical examination will be helpful in a number of cases, but not in all. After a complete physical examination we may still be in the dark as to the actual cause of jaundice. *Jaundice is purely a symptom, and must always be considered as such.* After determining its cause, however, the state of jaundice itself requires definite specific individual management. While the history and the physical examination will clarify the diagnosis in most cases, we will, in others, be dependent upon various laboratory procedures, which Dr. Reinhold will discuss later.

There are various laboratory procedures, more particularly the so-called liver functional tests (I do not like the name; we have no tests that can measure the various functions of the liver), that do fill a very valuable need in the differential diagnosis. As far as I am concerned, I have respect for certain of the liver functional tests if they are interpreted by men like Dr. Reinhold. Certain of them have a definite place in the diagnosis of jaundice, but they must not be exhibited as conclusive evidence of the type of jaundice with which we are dealing. *Certain of us are inclined at times to accept too readily the results of various laboratory procedures in making a diagnosis. That we must not do.* Our speakers will impress that upon us I am sure. The differential diagnosis of jaundice is particularly important in those cases where surgery may have to be considered.

The preoperative management of the jaundiced patient is such an exceedingly important matter today that the surgeon and the physician cannot work in too close co-operation. Dr. Ravdin will emphasize the importance of the preoperative and postoperative management of the jaundiced patient. You all know how very important hemorrhage is in jaundice; extraordinarily interesting and valuable information has been afforded in this field since Quick demonstrated the significance of the blood prothrombin in the jaundiced patient. This phase of the conference will be covered by Dr. Rhoads. Dr. Tumen will discuss the differential diagnosis and the medical management of the jaundiced patient.

I want all of you to take part in this conference. Do not be afraid to ask any questions that come to your mind. This is a controversial subject and I know that many of you will have questions that you would like to have clarified. We will best serve the purposes of this conference by having a free-for-all discussion. Every one is requested to take part and I hope none of you will go away with any doubts in your mind.

The Diagnosis and Medical Management of Jaundice

Henry J. Tumen, M.D., Philadelphia, Pa.

As Dr. Boles has already said, jaundice is only a symptom and has to be regarded as such. A great deal of time has been spent in trying to classify the diseases that cause jaundice. Without using the few minutes I have in entering into a controversy on that subject I might say that most clinicians interested in jaundice feel that the best classification is one that divides the types of icterus into those that are due to obstruction of the bile passages; those that are the result of hemolysis, including congenital hemolytic icterus; and those that are the result of diseases and damage to the liver cells themselves.

It is, of course, possible to have more than one type of jaundice existing in the same patient. Thus, very few patients with obstructive jaundice escape superimposed liver cell damage, and biliary obstruction from stone may complicate hemolytic icterus. This classification is of value, however, in emphasizing the necessity for the recognition of the primary cause in a given case of jaundice and in helping us formulate a therapeutic approach.

The clinical features of jaundice are of the greatest value in arriving at an opinion of its cause in a given case. It is possible to make a diagnosis of the cause of icterus at the patient's bedside in almost 80 per cent of the cases if a careful history and competent physical examination are obtained and if the stools are simply examined for the presence of bile. There is, however, a small group of about 20 to 30 per cent of cases in which a great deal of diagnostic difficulty might be encountered, and in such cases a good bit of clinical judgment is required as well as the assistance of various liver function tests in order to reach a diagnosis.

Some idea as to the statistical incidence of the causes of jaundice is of diagnostic assistance. We can say that approximately 25 per cent of the patients who have icterus have it as a result of gallstone. In 25 or 30 per cent the cause is some type of obstructing malignancy of the bile passages, and in about 30 per cent of cases jaundice is caused by liver cell disease. The other cases of jaundice are divided into the hemolytic type, those due to stricture, cirrhosis, etc. Two-thirds of the cases of jaundice have a definite mechanical cause. Those cases usually require some form of surgical management, although surgery may not offer a cure where malignancy is responsible.

An important diagnostic consideration is the age of the patient. We may say in general that jaundice seen in young people is usually due to liver cell injury. Catarrhal jaundice is the best example of this. In middle life icterus is more apt to be due to stone, and in old age carcinoma is the most frequently encountered cause. There are, of course, exceptions to these generalizations. Liver cell injury may occur in old people, stones in young people. Another generalization of value is that, by and large, obstructive jaundice in a female patient is usually due to stone.

As has been stated, the history is of fundamental diagnostic importance. There is, for instance, the question of association of an icteric patient with other patients who have or have had jaundice. Catarrhal jaundice is often an epidemic disease and the occurrence of icterus in more than one member of the household is very often helpful in deciding that we are dealing with this particular type of jaundice that probably has some infectious cause, although we do not know what it is. In taking the history we should also search for the recent use of some drug that might be injurious to the liver. Many people use medicines of that type and the patient should be questioned about the taking of drugs for the relief of "rheumatism" since many of these contain cinchophen. They should also be questioned about the administration of arsenicals.

A history of digestive disorders and dyspepsia is also of diagnostic help. Distress after the taking of fatty foods and marked flatulence in an obese female patient are considered characteristic of the presence of gallstones. These symptoms have numerous causes but their presence helps in formulating a general impression of the case. In catarrhal jaundice the onset of icterus after a period of acute digestive upset, often with symptoms similar to grippe, may be a diagnostic clue.

The association of pain with jaundice is also an important diagnostic point. It occurs chiefly with icterus due to stones. About 5 per cent of patients with gallstones, however, do not have pain and in about 20 per cent the pain is atypical. Roughly, in 75 per cent of patients with jaundice due to stone we encounter the classical picture of so-called biliary colic. This can be described as pain that begins in the right upper quadrant, gradually reaches a plateau of great severity, and, as it does so, radiates around the right costal border to the scapula. It may last for a number of hours unless an opiate is given. There may be associated chills and fever. We are in the habit of saying that jaundice associated with carcinoma of the pancreas is painless, but this is not always true and pancreatic carcinoma can be very painful. The pain differs from that of stone, however, since it is usually constant for long periods, boring in character, and located in the midepigastrium or lower epigastrium with radiation through to the mid-back to the left of the spine.

Another important diagnostic feature is the character of the jaundice itself—its duration, intensity, and constancy. The icterus of greatest intensity and longest duration is that seen resulting from malignancy with biliary obstruction, and this type of icterus is almost always constant and nonfluctuating after its onset. The jaundice of chronic liver injury is also apt to be prolonged and intense, but usually waxes and wanes somewhat during its course. Jaundice due to stone, on the other hand, is generally of short duration, reaching a peak of intensity rapidly and usually rapidly subsiding. The icterus of so-called catarrhal jaundice is also apt to be of short duration, reaching its height in about a week and gradually disappearing in a week or two.

Fever is not apt to occur in patients who have jaundice due to malignant biliary obstruction. It may be seen with or without chills in patients who have stone and is usually present at the time of the onset of catarrhal jaundice. Itching is a symptom that is often associated with jaundice but is hard to evaluate. It does not generally occur with uncomplicated obstructive jaundice; in our experience it has been most frequent in cases of biliary obstruction with superimposed severe liver damage.

Physical examination of the patient with jaundice may or may not give much evidence as to the cause of icterus. The old law of Courvoisier is still a good one and it can be stated that the presence of a distended gallbladder in a patient with obstructive jaundice is quite characteristic of malignant biliary obstruction, although it must be borne in mind that in some cases of carcinoma of the head of the pancreas the gallbladder may not be palpable. In patients who have obstruction from stone, antecedent cholecystitis usually prevents the gallbladder from distending, and for that reason it is not generally felt in such cases. The size of the spleen is also an important diagnostic point in cases of icterus. Splenic enlargement is almost never found in patients with simple obstructive jaundice. In acute and transient jaundice splenic enlargement is usually indicative of liver cell damage. In more chronic cases splenic enlargement is characteristic of the congenital type of hemolytic jaundice or of icterus arising on the basis of long-standing liver disease such as cirrhosis.

The liver function tests will be discussed by Dr. Reinhold. On this point I simply wish to say that examination of the stool for bile is an extremely important clinical test. If the patient who has been jaundiced more than a few days is passing stools that contain no bile, this is suggestive of complete biliary obstruction such as occurs in malignancy.

In the few remaining minutes of the time allotted to me I wish to say a word about the individual types of jaundice. The hemolytic type of jaundice is relatively rare. Probably less than 5 per cent of the patients we see with icterus fall in this category. Although hemolytic icterus may result from various drugs, the term is usually applied to a particular type of jaundice which is congenital and often familial and in which the icterus fluctuates a great deal, frequently exaggerated after a so-called crisis. The blood picture is quite characteristic and these patients have an anemia with red blood cells small, of increased fragility, and numerous reticulocytes are seen. This type of jaundice can usually be relieved by splenectomy, although this does not remove the fundamental cause of the disease, which is considered to be due to a defect of the red blood cells themselves. An important feature of congenital hemolytic jaundice is the fact that quite a few of these patients develop secondary gallstones because they are passing bile in which the pigment is heavily concentrated. This may produce a superimposed obstructive jaundice.

Of the cases of jaundice due to liver cell injury, catarrhal jaundice is the most common. This is primarily a disease of young people, occurring chiefly in those under age 30. It is frequently seen in the form of household or institutional epidemics. It is most common in the spring of the year and is characterized clinically by the onset of icterus after a prodromal period during which there are fever, nausea and vomiting, bowel disturbances, and general malaise somewhat suggestive of grippe. Ordinarily the jaundice lasts for a week or 10 days and during the icterus splenic enlargement is not infrequently noted. Catarrhal jaundice is not usually difficult to recognize clinically and is usually mild, complete recovery generally resulting. It must be realized, however, that catarrhal jaundice may occasionally be a precursor of chronic liver damage and it is possible that some cases of cirrhosis which come to light in later life have their onset with this acute liver injury of early life. It is wise to recognize that catarrhal jaundice may be followed by chronic liver damage, and these patients should be protected from drugs that may injure the liver unless it can be demonstrated to the best of our ability that liver function has returned to normal.

Since Dr. Ravdin is to discuss the obstructive types of jaundice, I shall not enter into a discussion of these.

In discussing the treatment of icterus it must first be realized that we do not treat jaundice as such. In outlining the treatment of a patient with jaundice we must realize that the therapeutic problem has 3 phases. We must first treat the cause of the jaundice, whether that is a surgical condition or one that arises solely from liver injury. We must also treat as best we can the liver damage itself that is frequently a secondary development of biliary obstruction, and lastly, we must make up for whatever deficiencies result from the absence of bile from the intestinal tract. Unfortunately, in discussing the medical management of jaundice, we must admit that we know very little about the treatment of liver cell injury itself. The liver must first be protected from further injury by the toxic substances, so that drugs that may injure the liver such as cinchophen or the arsenicals must strictly be avoided. In bringing about the restoration of liver function, we rely chiefly upon the fact that the liver has tremendous regenerative powers and that, if the patient is given the proper diet, the liver will frequently restore itself. The best diet to use in patients with liver damage is one that gives the patient a high carbohydrate intake corresponding to from 300 to 400 grams of glucose a day. We also now believe that it is necessary to supply adequate proteins and, for that reason, we give proteins to make up about 30 per cent of the caloric requirements. In case of very severe liver damage, the intravenous administration of plasma may be of value and in some cases oxygen should be administered since anoxemia increases liver injury.

Biochemical Laboratory Procedures in the Study of Jaundice

John G. Reinhold, M.D., Philadelphia, Pa.

The application of laboratory tests in the study of the jaundiced patient is a subject on which wide differences of opinion continue to exist. In the past, the emphasis has been mainly on the diagnostic aspect of such procedures, a field in which only modest success has been attained. The main reason for this lack of success is the unfortunate fact that a sharp dividing line between toxic or infectious, obstructive, or hemolytic jaundice often does not exist. Injury to the liver parenchyma due to a toxic agent at times is accompanied by obstruction within the bile passages of the liver. Obstructive jaundice commonly is complicated by liver damage, while in hemolytic jaundice also liver damage may be an important factor. All possible combinations occur. However, certain types of biochemical response are fairly characteristic under certain conditions, and if the physician is satisfied to accept the disclosure of symptoms rather than of diagnosis from the laboratory, useful information can be obtained. Recently, interest has shifted to the use of laboratory methods as aids in the management of the jaundiced patient. Used for this purpose, certain procedures have proven to be of considerable value. I shall discuss only those tests with which I have had first-hand experience. This will account for certain omissions in the course of the discussion.

Since this symposium is to deal only with jaundice, my discussion will not include those tests of liver function that are most effective in the absence of clinical jaundice, such as the bromsulfalein and other dye excretion tests.

I have outlined in the first slide a number of ways in which liver function tests can be utilized. It is desirable, regardless of the cause of the jaundice, to establish whether jaundice is increasing, decreasing, or remaining unchanged and this can be done best by serum bilirubin determinations. A considerable advance has been made within the past few years in the technic of bilirubin determination due to the introduction by Malloy and Evelyn of a method that does not require precipitation of serum protein. The older methods for bilirubin determination were inaccurate because of large and variable losses of bilirubin with the protein precipitate.

Concepts of the significance of the van den Bergh reaction have been altered by quantitative studies of direct and indirect reacting bilirubin made by means of the photo-electric colorimeter. Malloy and Evelyn have found both direct and indirect reacting bilirubin in serum in various types of jaundice, the relative amounts of each depending upon the pathogenesis. Even in normal serum about one-third to two-thirds of the total bilirubin gives the direct reaction and the remainder the indirect reaction. Coolidge has found that both types of bilirubin are adsorbed on serum albumin, the indirect type being adsorbed more firmly than the direct. It is not unlikely that changes in serum albumin known to occur in liver disease are concerned with the response to the van den Bergh reaction. Thus, deductions concerning serum bilirubin based on the van den Bergh reaction require re-examination and re-evaluation.

The diagnostic value of the van den Bergh reaction has been overemphasized. It has not the least value for distinguishing between toxic, infectious, or obstructive jaundice. True, indirect reactions predominate in hemolytic jaundice, and to this extent the test, being easily done, may have value. However, it is by no means pathognomonic. Recently, Dameshek has reported indirect reactions in nonhemolytic familial jaundice. Direct reactions in hemolytic jaundice are not uncommon. Except as modified for quantitative measurement of bilirubin by the Malloy and Evelyn technic, I believe the van den Bergh reaction as done at present has little to offer and its omission from the table was not an oversight. Perhaps the photo-electric method of determining direct and indirect bilirubin will alter this conclusion.

Should an estimate of the extent of injury to the liver be wanted, the hippuric acid test of Quick is the most generally applicable procedure, since it can be used successfully either in the presence or absence of jaundice. Several modifications of the Quick test have been proposed, although the original technic with improvements incorporated into the analytic procedure is quite satisfactory. Probstein and Londe have described a modification of the hippuric acid test requiring only a 4-gram dose of sodium benzoate with 2-hour collection of urine, and this deserves trial.

In patients who are quite sick and in whom vomiting occurs, or when renal function is impaired (and the latter seems a common complication), the hippuric acid test cannot be used. Under these circumstances determination of the partition of serum cholesterol into free and esterified fractions offers a convenient and reliable method for estimating the extent of liver damage. Quantitative measurement of the greatly increased urobilinogen output in urine can be employed for the same purpose. The galactose tolerance test, according to our experience, requires exceptionally severe acute liver damage to produce a positive response, a fact that probably explains the negative response when this test is applied in obstructive jaundice and accounts for what value it may have in differential diagnosis.

Because of the rapid changes occurring in liver function in many patients, it is desirable to obtain at least 2 specimens at intervals of 1 to 5 days, unless the condition is obviously static. Serial studies increase appreciably the significance of findings.

Cirrhosis frequently must be excluded as a cause of jaundice, and together with the lowered hippuric acid or elevated urobilinogen excretion, fractionation of serum proteins is valuable. Low albumin and elevated globulin is a highly consistent finding. Despite considerable scoffing and skepticism, we continue to use the Takata-Ara test for the detection of cirrhosis, and the results support our belief that this or other serum protein flocculation tests supply information with little expenditure of time that otherwise could be obtained only by means of elaborate apparatus and methods.

If clinical findings point to biliary obstruction as the cause of jaundice, it is again desirable to establish the trend of the icterus.

For differentiation between stone and malignant growth as the cause of obstruction, the determination of urobilinogen in feces can contribute valuable information. Watson demonstrated that, in the presence of obstruction due to stone, 10 mg. or more of urobilinogen was excreted in the feces per 24 hours, while in obstruction due to malignant growths, less than 5 mg. was excreted. We have found the low excretion in the latter condition to be a remarkably consistent finding. Although some uncertainty exists about the urobilinogen equivalent of the standard used by Watson, this is not a serious objection to the use of his method, and I believe it will prove to be one of the most valuable procedures in the study of biliary obstruction.

The question of liver damage in obstructive jaundice is an interesting and important one. Graham in 1918 stated that hepatitis was a constant accompaniment of obstructive jaundice. It is only within the past few years, as far as I know, that efforts have been made to evaluate this complication as a possible factor in surgery of the biliary tract.

Slide 2 shows in the upper part a typical record of a patient with clinical findings indicating obstructive jaundice caused by calculus. At the time the first specimens were taken the patient was quite sick. Liver function measured by serum cholesterol ester determinations showed a cholesterol ester concentration of 25 mg., evidence of severe liver damage. However, 6 days later, jaundice had decreased, practically normal liver function was found, and the patient was clinically much improved. Cholecystectomy was followed by another period of decreased liver function with subsequent return to normal values. A somewhat similar sequence is found in the patient whose record is shown in the lower portion of the slide. Here again liver function, low on admission, improved during the period of preoperative preparation. Refusal to consent to laparotomy was followed later by another cycle of severe liver damage which terminated fatally due to hemorrhage. This record dates back to the time before vitamin K was available.

The next slide shows by low serum cholesterol ester and low hippuric acid excretion severe liver damage continuing without remission prior to time of operation for relief of biliary obstruction. Death was thought to be due to a combination of pancreatitis and severe liver damage. Unfortunately, a serum lipase determination had not been done so that pancreatitis remained undetected until necropsy. Our experience indicates that prognosis is influenced by the severity of liver damage as shown by functional tests just prior to operation. Boyce and McFetridge, using the hippuric acid test, and Pickhardt, Bernhard, and Kahn using cholesterol partition, have reported similar findings. The desirability of testing liver function before operation seems clear. In most patients, improvement in function occurs spontaneously or as a result of preoperative preparation. When improvement in function does not occur, the lesion frequently proves to be inoperable, although this is not always true.

The next slide shows that serum phosphatase and cholesterol were elevated despite the absence of extrahepatic obstruction. This is a frequent finding. Increased phosphatase or total cholesterol is evidence *per se* of obstruction; however, it is impossible to determine by means of these tests whether the obstruction is intrahepatic or extrahepatic and as a result their clinical usefulness is limited.

Lipase determinations, as I have already indicated, are of real value for detecting involvement of the pancreas. Associated with jaundice this occurs most often as a result of obstruction of both pancreatic duct and common bile duct, as a result of neoplasm involving the pancreas, or as a result of extension of inflammation from a diseased gallbladder. We find determination of serum lipase more reliable than determination of serum amylase under these conditions. Johnson and Bockus have commented on the absence of abnormal elevation of serum lipase in catarrhal jaundice. Lipase activity of serum is easily determined and its measurement might well be employed more frequently, both in the presence or absence of jaundice whenever the likelihood of involvement of the pancreas exists, especially since clinical evidence of pancreatic disease usually is absent.

In connection with the evaluation of the hemolytic element in jaundice, I have listed 2 determinations that are of great value. Measurement of urobilinogen excretion in feces supplies quantitative evidence of the extent of blood destruction. The use of the fragility test requires no comment.

I have said nothing about prothrombin, since this indispensable determination is to be discussed by Dr. Rhoads. Low prothrombin in the jaundiced patient is evidence of liver damage; however, liver damage may exist without prothrombin being lowered abnormally.

In summary, it is possible to measure by means of liver function tests the severity of liver damage in the jaundiced patient and to a limited extent to learn the nature of the cause or causes of the jaundice. By repeated determinations, one may discover whether the condition is becoming better, worse, or remaining unchanged. It is possible also to learn whether obstructive or hemolytic elements are contributing to the jaundice and to determine whether the pancreas is involved. It is possible to measure bleeding tendency and to evaluate the effectiveness of prophylaxis or therapy directed toward the control of the latter. Whether this information is required by the clinician in a given patient is for the latter to determine. It is *not* possible for the laboratory to make a diagnosis by means of the procedures discussed. This must always remain the task of the clinician. It is most important for the clinician to understand that results obtained must be integrated with clinical findings before they can have significance in any individual patient.

The Use of Vitamin K

Jonathan E. Rhoads, M.D., Philadelphia, Pa.

A few years ago, before vitamin K was available, we went over all of the operations performed for the relief of jaundice on one of the surgical services at the Hospital of the University of Pennsylvania. The cases were divided into 3 chronologic periods. In the first period a high carbohydrate diet was given; in the second, glucose solutions were given intravenously as a routine procedure; and in the third period transfusions were routinely given, in addition. About 20 per cent of each group developed some hemorrhagic phenomenon. In analyzing the mortality rate in those that had hemorrhage, we found it to be 45 per cent; and in those that had no hemorrhage, 4 per cent. The hemorrhagic tendency in obstructive jaundice accounted at that time for about 50 per cent of the gross surgical mortality.

In 1935 A. J. Quick demonstrated that the loss of normal coagulability observed in obstructive jaundice was due to a lack of prothrombin and 2 years later the relation of vitamin K to prothrombin was revealed by Dam and his associates. Quick gave the medical profession the first test which adequately measured this factor for clinical purposes. Vitamin K was discovered by Dam, of Copenhagen, in 1934, as the essential dietary factor for the prevention of a hemorrhagic disease of chicks. It was shown by Doisy and his associates to be 2 methyl, 3 phytyl, 1-4 naphthoquinone, and to share its biologic properties with a number of related chemical compounds. Important among these are 2 methyl-1, 4-naphthoquinone, and 2 methyl 4 amino-1 naphthol hydrochloride.

The relation of these materials to prothrombin is not fully known because the latter factor is not a known chemical entity. It seems to be associated with the serum globulin. It is known, however, that complete withdrawal of the vitamin will result in reduction of the plasma prothrombin concentration in certain species of animals. The vitamin is believed not to be synthesized by the higher animals but is synthesized by a number of plants and bacteria. The fact that certain intestinal organisms have this power may explain why most patients do not develop a prothrombin deficiency on a K deficient diet.

The next fact which has been established is that naturally occurring vitamin K is a fat-soluble vitamin and is rather insoluble in water. It was found that bile salts were required for its absorption from the intestinal tract. The association of low prothrombin values with obstructive jaundice was, therefore, shown not to be due to a dietary deficiency of the vitamin but to the absence of bile salts from the intestinal tract. In 1938 Warner, Brinkhous, and Smith successfully corrected the prothrombin deficiency of jaundiced patients by the administration of vitamin K and bile salts and restored the plasma prothrombin concentration to normal levels.

As experience with this therapy accumulated, it was found that in a certain number of these patients the prothrombin concentration failed to return to satisfactory levels in response to vitamin K therapy. In our own clinic this group amounted to 18 per cent. It was noted that these individuals frequently had evidence of severe liver damage either at operation or at autopsy. It was known that certain liver poisons, such as chloroform, produced a fall in prothrombin levels, and by doing total extirpations of the liver in dogs it was possible to show that a progressive fall in prothrombin immediately began. Andrus, Lord, and Moore demonstrated that this fall was not influenced by the administration of large amounts of vitamin K.

A complete lack of vitamin K rarely occurs in adult patients because the intestinal bacteria are capable of synthesizing it to some extent. Prothrombin deficiency in some newborn infants may be due to such a lack of the vitamin. In the common type of prothrombin deficiency in obstructive jaundice there is a failure of absorption of the vitamin due to a lack of bile salts. Another possible cause of hypoprothrombinemia is reduced absorption of the vitamin due to disease of the intestinal tract. Finally, the prothrombin concentration may fall due to liver damage, even though adequate vitamin K is ingested and absorbed.

It appears probable that vitamin K enters into the synthesis of prothrombin and that this synthesis occurs in the liver. Prothrombin tends constantly to disappear from the blood after removal of the liver so that one must assume that this synthesis is going on constantly. When it is interrupted, a hemorrhagic diathesis can develop rapidly. This mechanism probably accounts for the sudden declines in prothrombin concentration which have at times been observed after operations on jaundiced patients.

All patients with biliary tract disease should be suspected of having low prothrombin values. Furthermore, even if the preoperative determinations show normal values, the patient may be unduly susceptible to a fall in the prothrombin concentration for 2 possible reasons. First, it is believed that vitamin K is stored to some extent and this store may have been used up due to reduced absorption of the vitamin. Second, the liver may already be somewhat damaged so that additional damage incidental to surgery may render it incompetent to maintain the normal prothrombin level. Therefore, we feel that all jaundiced patients in whom surgery is contemplated should receive vitamin K for a few days before operation whenever it is possible to defer operation for that length of time. This provides an opportunity to replenish any possible depletion of the store of vitamin K. After operation there is danger that the trauma to the liver may increase the damage to this organ sufficiently to produce a serious fall in the plasma prothrombin concentration. Furthermore, the bile salt concentration of the hepatic bile is greatly reduced following operations on the biliary tract so that vitamin K therapy with ample animal bile salts should be continued for 2 weeks after operation or until the wound is healed and the plasma prothrombin concentration can be shown to have attained normal levels.

It is certain that if the natural form of the vitamin is given orally, it should always be accompanied by bile salts to insure its absorption.

It is important to acknowledge that even if vitamin K is given with bile salts in adequate doses, one cannot assume that the prothrombin level will become normal. If liver damage is severe enough, this will not occur. Therefore, the routine use of vitamin K therapy does not free one from the necessity of laboratory determinations of the plasma prothrombin concentration both immediately before and at frequent intervals after operation. If the prothrombin level declines dangerously in spite of treatment, one can always resort to transfusions to elevate it temporarily. Fresh blood is preferable for this purpose. We believe that the plasma prothrombin concentration should be determined every day for the first 3 days, and then if it is at the normal level, every 2 days until the wound has healed. If the level is below normal 3 days after operation, daily determinations should be continued longer.

The result of the use of vitamin K in surgery of the jaundiced patient has been to reduce the incidence of hemorrhage very materially, and in general the use of the prothrombin test has made it possible to predict which patients are liable to hemorrhage. This prediction cannot be made absolutely because the prothrombin concentration can fall very rapidly if the liver is damaged, and a liver which is maintaining an adequate prothrombin level prior to operation may be so damaged during operation that the prothrombin concentration would fall sharply despite vitamin K therapy and lead to hemorrhage. In general, the combined use of the prothrombin test and adequate amounts of vitamin K make it possible to reduce the incidence of hemorrhage by over 80 per cent, and with the timely use of transfusions almost to eliminate hemorrhage as a cause of death in these patients.

At present, natural vitamin K is available as cerophyl and klotogen for oral use. One synthetic substitute, 2-methyl 1, 4 naphthoquinone, for oral use, is now on the market. It is possible that the latter will soon be available for intravenous administration and that 2 methyl 4 amino 1 naphthol hydrochloride will be released before long. The synthetic preparations are a little easier for the patient to take. The effective dose of those mentioned is 1 to 6 mg. a day. It is doubtful if larger doses are more effective, but as no harm has come from increasing the dose to 2 or 3 times this level, we have sometimes done so for short periods. For the majority of patients 1 mg. with 10 grains of one of the animal bile salt preparations given 3 times a day by mouth will be adequate. The treatment can be continued as long as necessary and we have not observed any harmful effects from it.

The Surgical Management of Jaundice

I. S. Ravdin, M.D., Philadelphia, Pa.

I shall confine my remarks to experiences we have obtained and observations we have made during the care of a moderately large group of patients with surgical lesions of the biliary tract. Much of what I shall say is not conventional but is, I believe, true.

It has been unfortunate that the profession is too apt to accept a supposed truth indefinitely. This is well exemplified in the matter of the etiology of jaundice. All jaundice associated with pain is not the result of a stone, and all painless jaundice is not due to malignant disease. *It can be said, however, without any question of doubt that jaundice is never due to simple gallbladder disease. When jaundice is present, disease has extended beyond the confines of the gallbladder.*

The liver function tests can give us interesting information. The more tests done on a single patient the more profitable the inquiry may be. It should be remembered, however, that as much as 60 per cent of the liver may be destroyed and all the function tests still be normal. Furthermore, such a liver may as the result of anesthesia and operation become completely incompetent subsequent to operation. Of this fact there can be no disagreement and because of this surgeons do not want to be lulled into a sense of false security by depending too much on the results of liver function tests.

Extensive injury of the liver during anesthesia may result from a number of factors, such as anoxemia, too high a concentration of fat in the liver, a low protein intake for some time prior to operation, starvation, etc. We have summarized the nutritional factors by stating that a liver high in fat and low in available protein presents maximal susceptibility to injury while a liver low in fat and high in available protein is maximally susceptible to injury by hepatotoxic anesthetics.

Glycogen in itself does not protect the liver from injury unless during the deposition of glycogen in the liver considerable amounts of fat are displaced from the liver. It is also known that dietary carbohydrate helps to spare the protein reserves of the body. On the other hand, we have shown that protein is a better dietary agent in displacing liver lipid than is carbohydrate, and furthermore, protein or some components of the protein molecule actively protects the liver against a number of the common hepatotoxic agents.

The diet of the seriously ill, jaundiced patient should consist of approximately 70 to 75 per cent carbohydrate, 20 to 25 per cent protein, and not more than 5 per cent of fat. Such a diet is of even greater significance during the period of repair, for maximal regeneration cannot take place on carbohydrate alone.

As soon as possible after operation, bile should flow into the intestine so that as far as possible the extrahepatic or intestinal functions of the bile can be accomplished. No amount of water and salt given intravenously can possibly make up for large amounts of bile lost to the exterior. If bile does not flow readily into the duodenum subsequent to operation, the bile which drains to the exterior should be fed to the patient by tube. This will overcome the tendency of these patients to develop asthenic states.

Before a T tube is removed from the common duct, a cholangiogram should be made, regardless of whether bile is flowing freely into the duodenum or not. The surgeon who says he has never left a stone in the common duct has not done much biliary tract surgery.

Finally, it is important to remember that the liver is the sole site for the synthesis of bile salt. If the liver is irreparably damaged, the synthesis of bile salt will be restricted, and even though the patient may not have colic after operation, he will continue to have indigestion. The surgeon can do nothing about this, for the patient has come at a time when surgery cannot offer its best.

THE CHAIRMAN: This subject is now open for general discussion.

DR. W. FRANK GEMMILL (York): I want to ask 2 questions, one of Dr. Reinhold and one of Dr. Ravdin. First, what is the value of phosphatase in the study of jaundice? Second, when Dr. Ravdin showed the lantern slides of necrosis of the liver, how did he know how much necrosis there was before the damage.

DR. REINHOLD: The determination of phosphatase is helpful in showing whether there is obstruction of the bile passages. The obstruction may not be in the common duct. It may not be an obstruction that can be remedied by surgery. In arsenical hepatitis there is obstruction. The test does indicate obstruction, but it does not necessarily indicate an obstruction that should be operated upon.

DR. RAVDIN: Dr. Gemmill's question is a difficult one. It reminds me of the preacher who wanted to baptize 2 men and keep 2 others for controls. When you are dealing with a human being, you cannot take out a piece of liver. This patient was a perfectly well individual who had a simple hysterectomy. She went into the hospital the day before operation and died 7 days afterwards. This was acute necrosis. It is what happens in chloroform anesthesia and what is produced by nitrous oxide. We can produce cell injury of a similar type in dogs without nitrous oxide.

DR. JOHN M. HIGGINS (Sayre): Will someone speak a few words about jaundice of the newborn, particularly the malignant type?

DR. RHOADS: I do not think vitamin K is of specific value in the treatment of erythroblastosis. The best treatment is transfusion. Marked jaundice in the newborn may be caused by congenital lesions of the bile ducts. We studied one such patient who lived 6 months. This patient had a little bile occasionally in his stools, but ended up with generalized edema and died. This patient did develop very marked prolongation of the prothrombin time. Some response was obtained with vitamin K and bile salts for a time. In spite of continuation of therapy, however, the prothrombin concentration declined a few days before death. Sections of the liver obtained at autopsy confirmed the suspicion that there was severe hepatocellular injury present.

Vitamin K is very valuable in hemorrhagic disease of the newborn. This may not be associated with much jaundice, although most babies have a slight icterus due to the hemolysis of the red cells during the first few days of life. It has been shown by Quick, Smith, and others that the average child has a lowered prothrombin concentration during the first few days of life. Only the occasional baby has a sufficiently marked hypoprothrombinemia to cause hemorrhagic phenomena. These children respond better to vitamin K than any other group of patients.

Efforts have been made to give the mothers vitamin K or one of its substitutes before delivery in the hope of preventing hemorrhagic disease of the newborn. This plan appears to be feasible. In a fairly long series of cases at the Johns Hopkins Hospital, Hellman and his associates found the average prothrombin of newborn infants higher if the mother was given vitamin K before delivery. Using one of the synthetic preparations it was possible, in the majority of instances, to raise the prothrombin of the infants to a satisfactory level by starting treatment in the mother after labor had begun.

DR. FORD M. SUMMERVILLE (Oil City): Among the hardest things we have to control and treat are biliary conditions. There is a tendency to use too much carbohydrate and there are too many blood transfusions, particularly in patients who are able to diet. I do not believe in overloading a liver that cannot take care of a normal amount of glucose.

DR. TUMEN: There is not much difference between what Dr. Ravdin said and what I said. I think that we have to use, as Dr. Ravdin stated, a diet which takes care of the caloric requirements of the patients but which does not encourage deposition of fat. We have to give enough carbohydrate to prevent protein loss and enough proteins to enable liver regeneration to take place. All types of liver injury are aggravated if the liver does not get an adequate protein supply. This type of dietary requirement can be met if the patient is given from 300 to 400 grams of carbohydrate a day plus enough protein to take care of the protein needs, that is, about 100 grams daily.

THE CHAIRMAN: Dr. Ravdin, do you discriminate between vegetable and animal fats?

DR. RAVDIN: Ten or twelve years ago some observations were published concerning dogs with common duct obstruction in which excessive injury had been produced. The administration of large amounts of protein produced abdominal difficulties. In their paper the authors pointed out that the protein, which was meat, contained large amounts of meat extracts. We have not found that meat protein produces abdominal difficulties in animals with common duct obstruction. Dr. Whipple's animals were protected by a meat diet. Meat diets that contain large amounts of extractives cause the difficulties.

There is no difference in meat and vegetable proteins. The type of meat is important. We used beef heart as the source of protein in a series of animals, and on analyzing the liver we found an increase in the amount of liver fat. We studied the heart as a source of fat and found that 40 per cent of calories come from the heart. One must be sure that the meat is lean meat. We are using mostly vegetable proteins, a large part of which come from various modifications of casein.

The Chairman: Since alcohol is absorbed so easily, what about the livers of alcoholics, as far as hepatic shock is concerned?

Dr. Ravdin: The thing to do is to get rid of the fat, which can be done by the use of a diet. Under a pure carbohydrate diet such as sucrose liver fat is increased instead of decreased. The addition of choline to the diet in animals causes disappearance of fat. It cannot be given to man or to the larger experimental animals, such as dogs, because it produces nausea and vomiting. The addition of protein to the diet is the best agent we now have for eliminating liver fat.

The Chairman: Dr. Ravdin, you quoted Dr. Deaver to the effect that any jaundice lasting over 3 weeks should be considered a surgical condition unless proven otherwise. Many patients have catarrhal jaundice that lasts 6 weeks. I do not suppose you meant to give the impression that a patient with jaundice lasting 6 weeks should necessarily be operated upon?

Dr. Ravdin: There is a righteous reason for our difference of opinion. Dr. Tumen points out that most cases of catarrhal jaundice occur in young people below age 30. Most patients whom the surgeon sees are beyond age 30. From the history one can find ample reason to believe that after 3 weeks the jaundice is still a medical condition. In a patient who has given a history suggestive of the presence of gallstone (indigestion, belching, etc.) and then gets jaundice with or without pain that exists 3 or more weeks, the condition should not be called catarrhal jaundice. Dr. Rhoads would verify that fact. I think that all physicians must become aware of the fact that, regardless of the age of a patient, obstruction due to gallstone can occur. This morning we have 4 patients around 23 years of age who are being operated upon for gall stone disease. I think Dr. Deaver's statement was made because he was called upon to operate on many late cases. Under such circumstances the mortality is high.

Dr. Sklar (Philadelphia): I'd like some one to say a word about intravenous amino-acid therapy in those patients who vomit a great deal.

Dr. Ravdin: Over a period of years we have done a good deal of work with intravenous amino-acid therapy. Although one can maintain a normal balance, there is no diet which would lead us to believe that we can build up protein either in concentration or normal amount. A great many of the patients with hepatic injury have low serum protein. Until such time as it can be shown that amino-acid therapy can produce protein synthesis in the body, it should not play a great part in practice. We do not yet know the essential for protein synthesis. This must vary from tissue to tissue. If the patient cannot take food by mouth and is given glucose intravenously, plasma can be used and the protein of the plasma will be utilized in the body.

Dr. Lewis (Philadelphia): Getting back to certain of the fundamentals, we are dealing this morning with the liver primarily. We talk about anoxia and its relation to the liver. Unfortunately, when we are dealing with people we are dealing with a complete mechanism. Anoxia may effect the liver and also the brain. We also come to the conclusion that certain changes are evident as a result of operation and starvation, either preoperatively, during operation, or postoperatively. We discuss the question of carbohydrate utilization in the body and the use of proteins.

We must take the normal, healthy human being to start with. Such an individual requires carbohydrate, fat, and protein to live on and remain in good health; he takes protein, carbohydrate, and fat as his normal diet. Why in a postoperative period would we expect to maintain him on carbohydrate? We must try to supply the things that are missing. If we divorce ourselves from the narrow annals into which we force ourselves and take a broader view of things, our object is to supply the things that are necessary for his general economy.

Several years ago I began treating my postoperative patients with high protein feedings immediately after operation, just as soon as their nausea had ceased. Their postoperative period was very much smoother. They were not bothered nearly so much with distention or discomfort and progressed much better. Serum albumin and certain vitamin deficiencies are important factors in postoperative management. It is important to try at all times to establish a normal body utilization of the foods to which we are normally accustomed.

The Chairman: Dr. Tumen, do you believe that arsphenamine necessarily has to be guardedly used in syphilis, or is it purely a question of drug hypersensitivity?

Dr. Tumen: That is not easy to answer. The previous health of the liver has a lot to do with the likelihood of the patient developing arsenical jaundice. It has been stated, for instance, that hepatic reactions to arsphenamine occur much more frequently when there are epidemics of catarrhal jaundice in the neighborhood. Apparently, in these cases, whatever the causative agent of so-called catarrhal jaundice is, this produces sufficient subclinical liver injury in certain individuals to cause further hepatic insult by a drug like arsphenamine to precipitate clinically recognized liver disease.

Our impression is that post-arsenical jaundice is apt to occur in a patient who has been in a state of malnutrition at the time of getting the arsenical treatment. Arsphenamine may produce slight injury to the liver that may not be recognized. Injections may cause digestive upsets that the patient and the doctor think nothing about, and subsequent doses of arsphenamine may then be followed by arsenical jaundice. Arsenical hepatitis is no reason for not using arsenic if it is necessary, since the hepatitis is a relatively rare occurrence; but if there is knowledge of previous liver injury, it is best to avoid the use of arsphenamine. Previous catarrhal jaundice may have left some residual liver damage that would make the patient more sensitive to the drug; therefore, patients who have a history of catarrhal jaundice should be studied by liver function tests before arsenic is given.

Dr. Thomas (Norristown): Should a patient with common duct obstruction be given bile salts? I always believed that bile salts increase the output of bile.

I want to commend Dr. Ravdin on an answer he made to a question 2 years ago. He said, "I was asked to write an article on biliary functional tests, and my answer was that I did not think they were worth anything." Today he said the same thing. I adhere now to the less complicated laboratory signs and also to the clinical manifestations.

DR. TUMEN: The important use of bile salts in obstructive jaundice is to aid in the absorption of vitamin K. Bile salts have no value in the treatment of obstructive jaundice except in association with the use of vitamin K in the prevention of hemorrhagic complications. Bile salts are necessary to carry the fat-soluble vitamin through the intestinal mucosa and aid in its absorption.

As far as biliary drainage is concerned, which has not been mentioned at all in this discussion, we use biliary drainage almost routinely in differential diagnosis of cholelithiasis and find it most satisfactory if we can get a proper bile fraction for examination. We feel that calcium bilirubinate pigment or cholesterol crystals, together or separately, are usually indicative of the presence of stones. There are certain exceptions to this statement, notably patients who have been jaundiced for some time. In such cases the stagnation of bile in the biliary passages may result in the precipitation of some bilirubin pigment and in such cases the finding of pigment alone does not necessarily mean that the patient has stone. I have personally never seen a patient who had cholesterol crystals and pigment in the bile, no matter what the duration of his jaundice, who did not either have a stone at operation or had passed a stone.

Liver function tests have been rather severly criticized this morning. It is not fair for us to think that these tests are worthless. They do have a definite value but have to be used with caution and understanding and be fit into the clinical picture that the patient presents. *Liver function tests simply tell what the function of the liver is at the time that the test is done.* In cases of jaundice they have their greatest value during the early stages of jaundice. If, during the early stages of jaundice, the liver function tests demonstrate extreme disturbance of liver function, then one can reasonably suppose that the jaundice is due to some type of liver cell injury. If such a patient shows no disturbance of liver function, it is probable that the jaundice is due to acute biliary obstruction. If, however, liver function tests are not done until late in the course of the jaundice and evidence of hepatic injury is then found, this finding has lost a good bit of its diagnostic value because the liver function tests cannot show whether the liver dysfunction was present from the onset or developed secondary to an obstructive process.

We feel quite definitely that if liver function tests are to be of diagnostic value in the study of jaundice, they must be done early in the course of jaundice. It is quite true, as Dr. Ravdin has said, that patients with obstructive jaundice may have liver dysfunction without the liver function tests being positive. That does not detract from the importance of the fact that when these tests do show evidence of liver dysfunction definite liver injury has occurred.

DR. RAVDIN: I think I stated perfectly clearly that I was in agreement with Dr. Reinhold in regard to liver function tests. He is an unusual chemist. *A great many chemists think they can diagnose a patient's condition on the basis of these tests.* If, as Dr. Reinhold says, the patient is considered before the test, that is all right. No functional test available today gives the functional capacity of the liver; it gives the functional capacity of the liver for that one test. No one test done on a group of patients is worth while. A group of these tests must be used, and with nearly every one there must be considerable injury before they give any information. *Many technicians have attempted to lull surgeons into a sense of security with these tests, but we lose the patients and we have the sleepless nights. We would rather look upon all these patients with serious liver injury before we do anything to them; then, regardless of what the functional tests may show, we have prepared the patients properly.*

As Dr. Lewis said, we must operate sometimes whether the liver function is good or bad. There is hardly such a thing as saying that a patient has obstruction without liver injury. Gallstone disease is as a rule associated with some degree of hepatitis. When the stone slips into the common duct, it merely adds to the injury the patient already has. The liver is an organ with such tremendous compensatory qualities that it can be excessively damaged without variations in urea formations. That is the important function of the liver.

THE CHAIRMAN: Dr. Reinhold, when the services of a highly competent chemist are not accessible, what test do you think would be most practicable to employ?

DR. REINHOLD: It is desirable to use more than one test, but it is not necessary to have a highly trained chemist. One who has had 4 years of chemistry in college including a course in analytic chemistry can do any of the tests that have been discussed here today. Unfortunately, there are not as many laboratories that have workers with these qualifications available as there should be. However, a laboratory worker with much less than that amount of chemical training can do bilirubin, icterus index, or hippuric acid determinations. Evaluating protein metabolism is highly important. There is nothing especially difficult involved in determination of cholesterol ester. The procedure is similar to that used in an ordinary cholesterol determination.

I think that these procedures can be used to obtain quantitative measurements that verify and supplement clinical observations and that so employed the study of jaundice attains a far more scientific basis. However, I do not want to tell the physician that he ought to employ liver function tests. Individual experience should supply the final answer. It may be found, when laboratory facilities are limited, that other procedures yield greater returns. We are told by many of our staff that the liver function tests described are helpful to them.

The hippuric acid test is not an infallible measure of liver damage, and this is true of other tests as well. Only limited information about damage of a moderate character can be obtained. However, severe damage can be detected with considerable success. An analogy exists in kidney function tests, where urea clearance may remain within normal limits despite the presence of kidney damage, yet the urea clearance determination can supply invaluable data in many patients.

THE CHAIRMAN: I think it is very important to determine the intensity of jaundice. With few exceptions a very deep jaundice immediately identifies a case as an obstructive type. Most of the nonobstructive types of jaundice are not so deep, one exception being acute yellow atrophy. The duration of jaundice is exceedingly helpful in differentiating it. Usually a jaundice of over 4 or 5 weeks is surgical, especially in older individuals, and if there is a history at all suggesting colic.

Dr. Robertson (Philadelphia): The laboratory work should be carried out, as the tests are of rather definite value. When kidney damage is present, liver damage will be greater. I would like to ask, then, why more is not done to make a study of kidney function as well as liver function in every suspected case? The French school did some work with animals in this regard some time ago, but I do not know that this has ever been repeated.

The Chairman: Dr. Ravdin, would you care to comment on this?

Dr. Ravdin: The puric acid formed in the kidney of the dog has never been shown in man. That the renal system should be studied is open to no question. There has been a great deal done on detoxification of the liver by the administration of glucose and the carbohydrate diets. We have experimented with every available measure. We can find no reference to a pure carbohydrate diet in the literature. Every diet contains an adequate amount of protein. Since there was a larger amount of carbohydrate present, the inference has been made that the carbohydrate protected the liver. The majority of detoxification processes of the liver are associated. Work will be published in the next few months to show that the administration of carbohydrate, by protecting the protein in the liver, will therefore cause these materials to remain in the liver; otherwise they would be drained away. The carbohydrate protects protein stored in the liver and in that sense is helpful. Why not give to the individual then the food which directly protects him?

NEW LEADS TO PREVENTION OF INFANTILE PARALYSIS FOUND

Discoveries that may lead to prevention of infantile paralysis were announced in reports to the medical committee of the National Foundation for Infantile Paralysis.

The mouth and alimentary tract are the probable areas of invasion by the virus of the disease, rather than the nose, as previously believed, and the alimentary tract is the chief site from which the virus is eliminated, Dr. Albert B. Sabin, of the University of Cincinnati, reported.

This puts the disease in a class with ailments like typhoid fever instead of in a class with colds and influenza, from the standpoint of how it is spread and how its spread may be prevented. Diseases like the common cold which invade the body by way of the nose are spread by germs in nasal discharges, the breath, and the saliva. Dr. Sabin could not find the causative virus in nasal secretions or saliva from patients sick with infantile paralysis, nor in portions of the nerves of smell examined after death in 12 fatal human cases. These findings, he pointed out, do not agree with the theory that the virus enters the body through the nose and travels along the nerves of smell to the brain and spinal cord.

Avoiding strenuous exercise and chilling during epidemics was advised by Dr. Sabin and Dr. Sidney O. Levinson, of Chicago, as a possible method of preventing the paralysis even if it does not prevent getting the disease.

"The history of heavy exercise (playing ball, swimming, hiking, etc.) is very frequently given by patients with paralytic poliomyelitis, and a limited personal inquiry has revealed that the interval between this exercise and the onset of paralysis is usually less than 24 hours," Dr. Sabin said. "This short interval suggests not only that those individuals were already harboring the virus in their nervous systems but also that it might already have involved their medulla (after-brain) and spinal cord and that the exercise could be the factor which converts what might have remained an inapparent or nonparalytic type of poliomyelitis into the frankly paralytic type of the disease."

This would mean that, at least in epidemic areas, those persons who have fever, headaches, intestinal upsets, pain in the back and neck, and other otherwise unexplained symptoms of acute sickness, should not only see a physician immediately but also, under no circumstances, should indulge in heavy exercise.

Dr. Levinson stated that monkeys with infantile paralysis who were chilled by immersion in cold water developed a more severe paralysis than did either those that remained in their cages or those that were immersed in water at body temperature. This would indicate the obvious necessity of guarding humans with the disease against chilling.—*Science News Letter,* May 24, 1941.

AVAILABLE AT LOWER COSTS

Some of the advocates of compulsory sickness insurance argue that this system should be adopted now as a defense measure. Apparently they are unaware of the more fundamental medical defense projects which are lagging for lack of funds.

The production of blood plasma is a striking example. The army desires 50,000 quarts a year. As Dr. Morris Fishbein has pointed out, this requires 200,000 donors. To obtain that number of qualified subjects, at least 600,000 persons must be examined, physically and serologically. This would not be a very great expense, compared to the billions which are tossed about so lightly at Washington, but so far the government has made no move to pay for such examinations.

On the same subject, the processing of blood plasma requires special apparatus. At present only 5 machines are available for this purpose in the entire country. If the government has ordered more, we have not heard of it.

Even such immediately important fields as aviation medicine are not being explored to their limits because grants are made in occasional small sums where a couple of millions are needed.

If the government is having difficulty in financing these unquestionably urgent defense measures, how can it even consider compulsory sickness insurance?

Anything could be a "defense measure" by the definition which includes compulsory sickness insurance in this term. Actually there is nothing obligatory prepayment would supply which is not already available at lower cost.—*New York Medical Week.*

The Medical Treatment of Glaucoma

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IN THE vast majority of cases of glaucoma, operation will have to be resorted to sooner or later. When the disease is first recognized it is certainly wiser to employ medical treatment first, and there are instances where operation cannot be done, which makes medical treatment imperative. The literature is full of all sorts of medicaments for which success is claimed. I will discuss only those measures which have been given a fair trial by medical clinicians and chiefly those which I myself use.

Since the cause of glaucoma is unknown, all treatment, medical as well as surgical, is directed at relieving the chief symptom of the disease, i. e., the rise of intra-ocular tension. The intra-ocular tension can be reduced by the following means: (1) Making the blood hypertonic, so that fluid is withdrawn from the interior of the eye into the intra-ocular blood vessels. (2) Contracting the vascular bed of the choroid, so that the volume of the intra-ocular contents is reduced. (3) Miotics. By contracting the pupil the outflow of aqueous is enhanced from the anterior chamber. It is not certain whether the miotics ordinarily used have an additional action to this, but until we have more evidence we can consider that they lower intra-ocular pressure chiefly by this means.

Substances Which Make the Blood Hypertonic

When any substance is injected into the blood stream which makes the blood hypertonic, fluid will be withdrawn from the tissue spaces through the capillary walls into the blood until this is diluted to its normal concentration. The increased volume of isotonic fluid will then promptly leave the vascular bed and enter the tissue spaces again if the substance injected is not held back by the capillary walls. The ideal preparation for injection therefore is one which will be held in the blood, once it is injected intravenously. For our purposes it must be a substance to which the intra-ocular capillaries are not permeable, so that the preparation cannot diffuse into the aqueous.

The first substance which was tried for this purpose was sodium chloride. Thirty to 50 c.c. of a 30 per cent solution was injected intravenously, and it was found that the intra-ocular tension could be reduced remarkably. Since ordinary salt in isotonic solution can diffuse out from the intra-ocular capillaries into the aqueous, it was soon found that following the fall of intra-ocular pressure there was a gradual return to normal, and often a considerable rise above that before the injection was made. This was due to the fact that as soon as the blood had become isotonic the fluid diffused out into the eyeball again, increasing its volume.

Fifty per cent glucose was the next substance tried, and here the results were better, but still not permanent. Glucose is less diffusible than salt, but eventually it too will pass through the ocular capillaries, and the fluid which it withdraws will find its way back into the eye again, and the tension will rise. Glucose has another advantage over 30 per cent salt solution in that the latter causes severe necrosis if any of the injected material gets out into the tissues around the vein in which it is being injected. However, this solution cannot be used in diabetics, and its effect is still quite transitory.

Dyer and Matthew then resorted to hypertonic solutions of sucrose. This sugar does not diffuse into the aqueous and is very slowly eliminated by the kidneys. Four hundred c.c. of a 25 per cent solution is injected slowly into a vein over a period of one hour. In from 2 to 4 hours there is a marked reduction of intra-ocular tension, which reaches a maximum in 5 to 6 hours. The effect gradually wears off, and in 24 hours the tension may have risen to its previous level. Diabetes is no contraindication to the use of sucrose.

It is fairly certain that sucrose does not diffuse into the anterior chamber, for after one hour an injection of 30 c.c. of 50 per cent sucrose solution intravenously in dogs produced no

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appreciable rise in the reducing substances of the aqueous.

Sucrose, however, is liable to produce renal damage, and is therefore contraindicated in any patients who are suspected of having poor kidney function. Lindberg found severe renal damage in dogs as a result of sucrose, and after the injection of sucrose in human beings supposedly normal he found occasional blood cells and casts in the urine.

Because of the possibility of renal damage, Bellows, Puntenney, and Cowen suggested the use of sorbitol in place of sucrose. Sorbitol is a complex alcohol of about the same molecular size as dextrose. Lindberg found that it did not affect the kidneys. It may be used in diabetics. One hundred c.c. of a 50 per cent solution is administered intravenously over a period of one-half hour. All liquid is restricted for 24 hours. This produces a drop in tension, particularly in patients with high intra-ocular tension. The tension begins to drop about 2 hours after the injection, but its greatest effect is not reached until 12 to 24 hours have elapsed. The tension gradually rises to its previous level, but does not exceed this.

Along the same lines as the injection of hypertonic solutions is the creation of a hypertonic state of the blood by means of saline purgation, restriction of fluids in the diet, and sweating. None of these methods are nearly so effective, however, and cause considerable distress to the patient.

The chief value of this form of treatment is in reducing the intra-ocular tension prior to operation. Its chief indication is therefore in cases of acute glaucoma, where it should be used in conjunction with miotics until an emergency operation can be performed. I have never seen operation avoided by this method, and I believe that every case of acute glaucoma if not operated upon will sooner or later suffer another attack, and so should have the operation even though the tension may be temporarily reduced. The acute attack in itself is good evidence that such an eye has very little compensatory reserve, and it is far better to safeguard the patient by an iridectomy before permanent adhesions have formed than to wait until a second emergency arises.

This treatment is also obviously of use in all forms of glaucoma prior to operation if the tension is sufficiently elevated to endanger the eye during the operative procedure.

Vasoconstrictor Substances

Any substance which will contract the blood vessels in an organ will reduce the tissue tension as the volume of blood in the organ is diminished. Adrenalin is known to be a powerful vasoconstrictor drug, but its action on the vessels in the interior of the eye is quite ineffective if it is merely dropped in the conjunctival cul-de-sac. This is due to the fact that it constricts the conjunctival vessels which prevents its absorption so that it never reaches the choroidal circulation. If it is injected under the conjunctiva or if adrenalin packs are given on pledgets of cotton under the upper lid, sufficient amounts of the drug are absorbed to affect the interior of the eye. At the present time we are not sure if its tension-reducing action is due to the constriction of the vascular bed or to the marked vasodilatation which follows its constrictor activity. It has been noted that the maximal effect on the tension occurs in from 12 to 24 hours after the drug has been given, which is long after the vasoconstrictor effect has worn off. Whatever its mode of action it is certain that drugs like adrenalin which cause vasoconstriction cause a remarkable drop in tension when it is elevated above the normal, and this in spite of the fact that such drugs usually cause a simultaneous dilatation of the pupil.

Adrenalin was the first drug used for this purpose, and although it is occasionally used subconjunctivally, the majority recommend the use of epinephrine packs given as follows: The eye is anesthetized with 2 or 3 drops of pontocaine. Eserine is given both before and after the adrenalin pack in order to obviate the rise of tension which sometimes follows the use of adrenalin. A small flattened pledget of cotton soaked in 1:1000 adrenalin is placed in the upper fornix under the lid and left there for 5 minutes.

Since adrenalin is not effective unless it is absorbed, it is not surprising that general symptoms frequently follow its use. The rise of blood pressure and increased heart rate which follow are not only unpleasant but may be dangerous in older people and those with hypertension. In order to avoid these symptoms, Hamburger substituted the ordinary adrenalin which is levorotatory with a dextrorotatory synthetic adrenalin, and called it glaucosan. Since this had to be used subconjunctivally, he then substituted a stronger adrenalin in 2 per cent solution, which was levorotatory but to which had been added an optically inactive substance produced in the manufacture of adrenalin. This he called links-glaucosan, and advised its use by dropping in the cul-de-sac. A similar preparation, epinephrine bitartrate, has been advocated by Dr. John Green, and more recently a solution of adrenalin 1:100 has been put on the market whose action is even more powerful. Hamburger's final preparation called aminoglaucosan is an entirely different product having nothing to do with adrenalin, and will be considered under the heading of miotics.

All of the adrenalin compounds dilate the pupil. In fact one of their chief fields of usefulness is not in combating increased tension but in dilating the pupil in the presence of synechiae. The dilatation of the pupil is not without danger and in a number of cases has led to the development of an acute rise of tension necessitating immediate operation. Such attacks may be prevented in the great majority of cases, according to Gifford, by using miotics before and after treatment to keep the pupil small.

There is some difference of opinion as to what cases are most suitable for therapy with adrenalin in one of its many forms. I do not feel that it should be used routinely, and especially by the patient himself as a home remedy, even with the addition of miotics, although it has been recommended for this purpose by some authors, prepared as an ointment. It is of use prior to operation, either by instillation or by retrobulbar injection, especially in cases of secondary glaucoma due to iritis or iridocyclitis.

Another drug which is advised for its use on the blood vessels is ergotamine. This is a preparation of ergot, and is supposed to decrease the permeability of the blood vessels. Werner has reported the use of ergotamine tartrate (gynergen) subconjunctivally. A number of other authors have used the drug subcutaneously. It is not very effective in drops in the eye, and its effect hardly justifies the expense to the patient.

Within the past year another synthetic adrenalin compound has been put on the market called neosynephrin. One drop of a 10 per cent solution, which is a milky fluid, is dropped in the cul-de-sac. The pupil dilates widely and tension is reduced in some cases. I have used the drug only for its effect in breaking up synechiae.

Miotics and Allied Compounds

In order to understand the use of the drugs that have recently appeared which act like or aid the action of the ordinary miotics, a few words are in order on the pharmacodynamic action of pilocarpine and eserine.

When the third nerve is stimulated, the pupil contracts. It does so because stimulating the third nerve, which belongs to the parasympathetic nervous system, produces acetylcholine at the termination of its fibers. Acetylcholine acts on the cells of the sphincter muscle, causing them to contract. As soon as the stimulation ceases, no more acetylcholine is formed and that which has accumulated is rapidly broken down by an esterase which is present in the tissues. The sphincter muscle then relaxes.

Eserine is a substance which has an affinity for esterase, and binds it so to speak. When eserine is dropped in an eye, the esterase present can no longer break up acetylcholine. The acetylcholine gradually accumulates therefore, as some is constantly being formed, and produces a contraction of the pupil. If the third nerve is cut and allowed to degenerate, no acetylcholine is formed and the pupil dilates and stays dilated. Eserine is now quite ineffective in causing contraction of the pupil. It still binds the esterase present, but since no acetylcholine is there, the sphincter muscle is not stimulated. Similarly, if atropine is put in an eye, acetylcholine is not effective and eserine is no longer effective because atropine blocks the motor end plate where acetylcholine works.

Pilocarpine has an entirely different action from eserine. It directly stimulates the cells of the sphincter muscle. It is in effect a cholinergic substance. When the third nerve is cut and allowed to degenerate, pilocarpine is not only still effective but its effect is enhanced. After atropine is given, pilocarpine is not effective because atropine has blocked the motor end plates.

Pilocarpine and eserine both contract the pupil, and probably this is the main factor in the reduction of the tension which takes place with both of these drugs. Eserine is the most powerful, and is usually used in from 0.2 per cent to 0.5 per cent solution of either the sulfate or salicylate. Pilocarpine may be used in from 0.5 per cent to 1.0 per cent solution, either the hydrochloride or the nitrate. Both these drugs cause some conjunctival irritation after prolonged use, and in some hypersensitive persons cause an intense folliculosis. The *p*H of these solutions is well on the acid side. A 1.0 per cent pilocarpine nitrate has a *p*H of 4.8, and a 0.2 per cent eserine sulfate solution has a *p*H of 6.6. Some of the irritation may be due to the effect of the *p*H of the solutions, which can be partially remedied by the use of buffered solutions in making up the dilutions of the drugs. Gifford recommends the following buffer solutions. Alkaline buffer solution No. 1 whose *p*H is 7.6 is made up by adding 1.5 c.c. of the following solution:

Na2Co3 (anhydrous) ...	21.2 Gm.
Distilled water	1000.0 c.c.

30 c.c. of
to the following:

Boracic acid	6.2 Gm.
KCl (anhydrous)	7.4 Gm.
Distilled water	1000.0 c.c.

Pilocarpine is the miotic which should be used in chronic simple glaucoma where the tension is not excessively high. In principle the weakest solution which will keep the tension in check should be ordered. When the tension is only slightly elevated, I start with a 0.25 per cent solution and order the drops put in the first thing on awakening in the morning and just before going to bed. If the patient is seen around noon and the tension taken then, an idea can be gained as to how effective this treatment is in holding tension. If still elevated, 0.5 per cent solution is then ordered for use at the same time. If this is still not sufficient, the same drops are ordered to be used 3 and then 4 times daily. If this is not sufficient to hold the tension, operation must not be delayed further. I seldom resort to the use of eserine in chronic glaucoma unless for some reason operation cannot be done.

Eserine may be prescribed in 0.5 per cent to 1.0 per cent for use by the patient as an emergency drop if he begins to see haloes; but if eserine has to be resorted to, it is dangerous to pursue medical treatment.

When a dose of pilocarpine has been found which seems to keep the tension in check, the patient is told to report once a week for tension, and central fields are taken every 2 weeks. If the tension is controlled and there are no progressive changes in the fields, the visits can be made once every 2 weeks and the fields taken once a month. There are occasional cases in which drops are effective in holding the disease in check and operation is never needed. These cases often show remissions and for months at a time all drops may be stopped. The patients must be kept under close observation, however, for the tension may start to climb again. I have had under my care several patients for over 5 years in whom it is necessary to give an occasional course of miotics, but each time the rise of tension has been satisfactorily controlled, and for months they have gone along with no treatment.

Since acetylcholine is the substance which normally contracts the pupil when the third nerve is stimulated, it is natural that it and other cholines should have been used in the treatment of glaucoma. Among these, doryl (carbaminoylcholine) has been used with some success by Velhagen and others. A 0.75 per cent solution is used 2 to 3 times a day in drop form. It is superior in some cases to a 0.5 per cent solution of eserine, but causes a marked congestion of the eye, as all the cholines dilate capillaries.

More recently, another choline which is more stable and less irritating has found considerable favor, i. e., mecholyl. This drop is methyl-beta-acetylcholine chloride, sold by Merck & Company. It is not effective in normal individuals in contracting the pupil according to Scheie, even when a 20 per cent solution is used. In glaucoma of long standing the sphincter seems to have become sensitive to mecholyl and a 2½ per cent solution is effective in contracting the pupil.

Prostigmin is a drug which has an action similar to eserine, i. e., it inhibits the action of esterase. It is logical to use this or eserine in association with mecholyl. Prostigmin is used in 5 per cent solution.

Aminoglaucosan, originated by Hamburger, is a 10 per cent solution of histamine, and is probably the most powerful miotic we have. It produces so much pain that it is hardly advisable to use it save in acute glaucoma as a heroic measure.

Treatment of the Various Forms of Glaucoma

1. Acute glaucoma.

Morphine for pain. Mecholyl 20 per cent and prostigmin 5 per cent each one drop every 10 minutes for 7 doses. Follow by pilocarpine 1.0 per cent and eserine 1.0 per cent each one drop every hour. Inject 100 c.c. 50 per cent sorbitol intravenously. Basal iridectomy under pentothal or vinesthene.

2. Secondary glaucoma.

Continue atropine. Adrenalin 1:100, or neosynephrin 10 per cent. Paracentesis in uveitis, iridectomy in iritis.

3. Primary simple glaucoma, noncongestive.

Pilocarpine in doses up to 0.5 per cent 4 times a day. Eserine 0.5 per cent for emergency. Operation.

4. Congestive glaucoma.

Treatment the same as for acute glaucoma.

5. Absolute glaucoma with pain.

Enucleation.

ABSTRACT OF DISCUSSION

Walter I. Lillie (Philadelphia): There are two schools of thought in the treatment of glaucoma: The first is to treat the condition medically as long as possible and then operate in the terminal stages of the disease; and the other is to operate as early as any visual field changes develop, and use medical therapy afterward if necessary. Both Dr. Adler and I belong to the second school of thought.

Nothing can be added to his thorough presentation of the different types of medical treatment. The different forms of drugs used reveal there is no one drug entirely satisfactory in the treatment of any type of glaucoma. A drug is effective for only a short time in the eye, while surgery usually maintains whatever lower level of the tension is obtained.

Dr. Adler has just mentioned that in the treatment of chronic noncongestive glaucoma or simple glaucoma, if one drop of pilocarpine 3 times a day does not keep intra-ocular tension within normal limits and maintain stationary fields of vision, he advises an operation. I concur in that advice, as the earlier one can operate on a chronic noncongestive glaucoma, the better chance one has of giving the patient an opportunity of maintaining useful vision for many years. But I still have a very pessimistic attitude toward any form of glaucoma, although the acute congestive form is the one type that we improve the most easily.

My former chief, Dr. Benedict, has made this remark, and it seems to me quite accurate: "In chronic noncongestive glaucoma, regardless of the type of treatment employed, if the patient lives long enough he will be blind from his glaucoma." I believe the earlier one can institute a surgical procedure which maintains intra-ocular tension and visual fields within normal limits, the vision will be maintained for a long period of time. Medical therapy can be supplemented if necessary until death ensues.

ERIE TO HAVE PART IN ARMY INDUCTION TEST

In order to give the selectee a break and to stop criticism of the induction stations, it was decided by the Third Corps Area to use Pennsylvania, which is a nation in itself, as a test state for a 30-day period. Rather than rely on the induction stations, as they now exist (Pittsburgh for this area), it was decided to set up in 7 cities (Erie, Williamsport, Scranton, Altoona, Pittsburgh, Philadelphia, and Harrisburg) federal army examining stations under the supervision of the army, with final examinations by the members of the respective county medical societies. From here the draftee gets a waiting period to make adjustments and then goes to a reception center, as New Cumberland, Camp Meade, or Camp Lee, where he is sworn in as a soldier.

On May 1 this new plan was explained fully to the Preparedness Committee of the Erie County Medical Society by Col. Don G. Hilldrup, Third Corps Surgeons Office, and Col. John B. Richardson, Adjutant General's Office, Third Corps, both of Baltimore. The co-ordinator for the local setup is to be Capt. Charles H. Bloom, of Altoona, and responsibility for the administrattion rests with Col. Francis H. Burr, U. S. Army recruiting officer, Pittsburgh, in charge of induction there.

After full discussion of the new experiment, it was decided to call a special meeting of the county society for the afternoon of May 1 at Hamot Hospital. Sixty members attended this meeting and the vice-president, Dr. Ray H. Luke, presided. The details were outlined by Drs. Davis and Gannon after full explanation by Col. Richardson and Col. Hilldrup. The first examinations were set for May 27 and 28 and the second period, June 5 and 6. The plan is to examine about 150 boys each day, working 2 days of 8 hours, every 10 days with a fee of $15 per examiner. Fifteen members, with the co-ordinator, compromise the federal army board which is to have the O. K. of the A. M. A. Preparedness Committee.

It was explained that this does not change the state Selective Service setup in the least. Erie will continue its group examinations. Out of Erie the doctors will examine in their offices as before and this holds for adjoining counties. Erie is to be the army examining center for the following counties: Erie, Crawford, Mercer, Venango, Warren, Forest, McKean, and Elk. This is a month trial period and, if successful, will be extended to the entire nation, thereby doing away with the so-called induction stations. This examination is final. Additional neuropsychiatrists are to come from Warren to assist in this new duty. Each examiner will have a clerk. Boys of the National Youth Administration will assist as guides. Technicians and male stenographers comprise some of the help on the floor.

Both Col. Richardson and Col. Hilldrup approved of the local setup in examining draftees. Dr. Schlindwein moved and Dr. Boughton seconded the motion that the Preparedness Committee of the county society study the plan and decide what action to take. This motion was withdrawn when Col. Richardson stated that time was essential and asked for action on the floor. Then Dr. Davis moved that the county society accept the plan as outlined by the visiting army colonels. It was seconded by Dr. Lick, and unanimously passed.

The place of examination was next studied. St. Vincent's Hospital was said to be ideal for the purpose, as it served so well under the state Selective Service routine. However, this was impossible as no additional days were available without disrupting the schedule of the new building. Hamot Hospital was considered, but was thought to be too small. Then the Armory and Franklin School were studied. The former was suitable, and the latter could be used very nicely. Then the question of laboratory and x-ray facilities was studied. To send these boys about town to the hospitals for their x-rays meant traveling and upsetting hospital routine. It was then decided to install a complete x-ray unit in the Armory, which solved the issue at once. The army officials agreed to this program which is to be paid for out of the cost of x-ray. Each man is to have an x-ray the day of examination.

That the physicians of the Erie County Medical Society are deeply interested in medical and military defense is shown by the volunteer response to the letter sent to every member asking whether they wished to serve on the state Selective Service and federal army examining board.

In 3 days after the letter was sent, 73 replies were received by the secretary—34 of them from members who had already examined at St. Vincent's Hospital and from 24 members who have not as yet served. There were 52 from the city and 6 volunteers from the county, with only 3 refusals. All refusals were because of illness.

This is a splendid record of co-operation, patriotism, and personal sacrifice, with more to come. In the words of Captain Bloom, "You must have a wonderful society. I expected to arrive here and find confusion, because of previous experience. Instead, I find all in readiness, the schedule arranged, and the x-ray equipment set up. Despite private practice, your members have found time to assist the army, and again I say that you must have a wonderful society."—*The Stethoscope.*

CARCINOMA OF THE VULVA

ROSCOE W. TEAHAN, M.D., and HOKE WAMMOCK, M.D.
Philadelphia, Pa.

THE diagnosis and treatment of malignant disease of the vulva are not particularly difficult problems. The relative infrequency of the disease accounts for the lack of general knowledge of the subject except for a few people who have had an opportunity to observe a series of such patients. As a result of their experience, definite ideas about the management of this disease have been obtained. In the past 10 years we have had an opportunity to observe 33 patients with this disease.

We recognize that most of you attending this section are gynecologists and what may be said to you might be considered superfluous. Taussig remarks that in view of the relative infrequency of the disease it is not surprising that but a few gynecologists have developed any definite routine in its management.

The incidence of cancer of the vulva has been reported as from less than 1 per cent up to 10 per cent of all cancers of the female genitalia. Schottländer and Kermauner[1] report 2 to 4 per cent, Taussig[2] 3 to 4 per cent, Schreiner and Wehr[3] 5 per cent, and Gurlt[4] 10 per cent. Probably the true incidence lies between 3 and 4 per cent. Lovgren[5] reported a case in a child of 17 months and others have been reported in patients as young as 14 years. In our series the youngest was 36 years and the oldest 83. Only one patient was under 50 years of age. It is primarily a postmenopausal disease occurring in the fifth and sixth decades of life.

Carcinoma of the vulva occurs most frequently in patients who have been married. It is found in the lower economic classes with greater frequency, but seldom is seen in negroes. In our group all of the patients were in the white race.

A review of the anatomy, especially the lymphatic distribution of the vulvar region, may be useful in better understanding the disease.

Callander[6] describes the vulva as follows: "The female external generative organs lie within the pubic arch superficial to the urogenital diaphragm. They include the labia majora with the mons pubis (veneris), the labia minora and enclosed vestibule of the vagina, bulb of the vestibule, and orifices of the urethra and vagina. Of these structures, collectively termed the vulva, usually little more than the mons pubis and labia majora are visible."

The most common sites of carcinoma of the vulva are the labium majus, labium minus, clitoris, and external meatus, in the order given. There are times when the extent of the disease is such that the primary site of origin is most difficult to determine.

The lymphatics (Rouviere[7]) of this area were studied by Sappey in 1874 and later by others including Marcille, Bruhns, Cuneo, and Poirier.

The mucocutaneous covering of the vulva contains a copious network of lymphatics superposed on several layers. This network covers the fourchette, the urinary meatus, vestibule, prepuce of the clitoris, clitoris, labia minora, and inner surfaces of the labia majora.

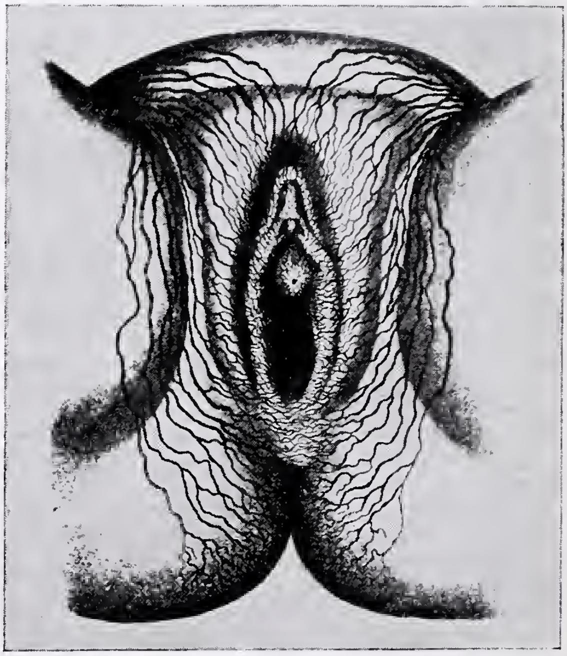

Fig. 1. The superficial lymphatic system of the vulva and perineum (*Anatomie des Lymphatiques de L'Homme* by H. Rouviere).

Read before the Section on Obstetrics and Gynecology of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

This network of lymphatics, which is tributary to the inguinal glands, is directly separated by the hymen from the vaginal network of lymphatics, which is tributary to the pelvic glands. The separation is especially marked in children, in whom the vaginal lymphatics do not terminate in the inguinal nodes. In adults, injection at the lower level of the vaginal portion reaches the inguinal glands, not by direct canals but by numerous anastomoses which unite the vulvar and vaginal networks.

From this extensive network are formed the collecting trunks. These empty into the superio-medial group of the superficial inguinal nodes, and to a lesser extent the inferio-inguinal group. The superficial inguinal nodes are connected with each other by anastomoses, and the lymph from the vulva may thus pervade indirectly all the nodes of the inguinal group. An injection of fluid or pathologic process may be transmitted from one-half of the vulva to the inguinal nodes of the opposite side by the lymphatic network or the collecting trunk.

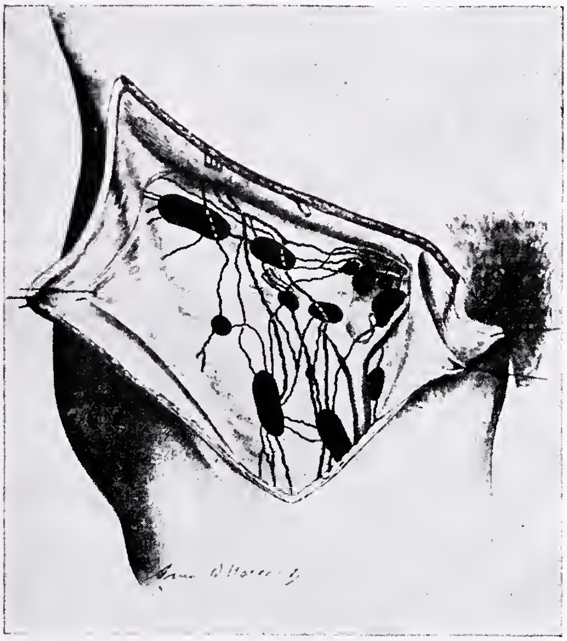

Fig. 2. The superficial inguinal lymph nodes (*Anatomie des Lymphatiques de L'Homme* by H. Rouviere).

From the superficial inguinal nodes, some of the efferent trunks proceed to the deep inguinal nodes. The majority, however, run directly to the external iliac nodes and particularly to the lateral, middle, and medial retro-femoral nodes.

The deep inguinal nodes are small in size, vary in number, and lie beneath the fascia lata and medial to the femoral vein. The uppermost of these, the node of Cloquet, is normally present but may be absent. It is situated in the femoral canal between the femoral vein and the lacunar ligament.

The lymphatics of the clitoris spread to the inguinal and femoral group in a similar manner, but are more likely to spread to the glands inside the pelvis.

The failure to appreciate fully the ramifications of the lymphatic system may prove disastrous in the choice and application of the proper therapeutic measure.

According to Cuneo and Poirier, the lymphatics are invaded from the beginning in epithelial tumors.

The cause of carcinoma of the vulva is not known. Sometimes it begins in benign lesions. Senile papillomas are especially apt to become malignant. Sebaceous cysts are said to undergo malignant change occasionally. Malignant melanomas are prone to develop in small pigmented or nonpigmented moles, which are quite common in the hairy parts of the mons veneris and labia majora. Cancer has been observed to arise in the edge of a gummatous ulcer. The gonorrheal wart does not tend to become cancerous. Birth trauma is not an etiologic factor; kraurosis does not predispose to the development of cancer. The most frequent precancerous lesion of the vulva is leukoplakia.

Many authors have written of the association of leukoplakia and cancer. Berkeley and Bonney[8] stated that in every case of cancer of the

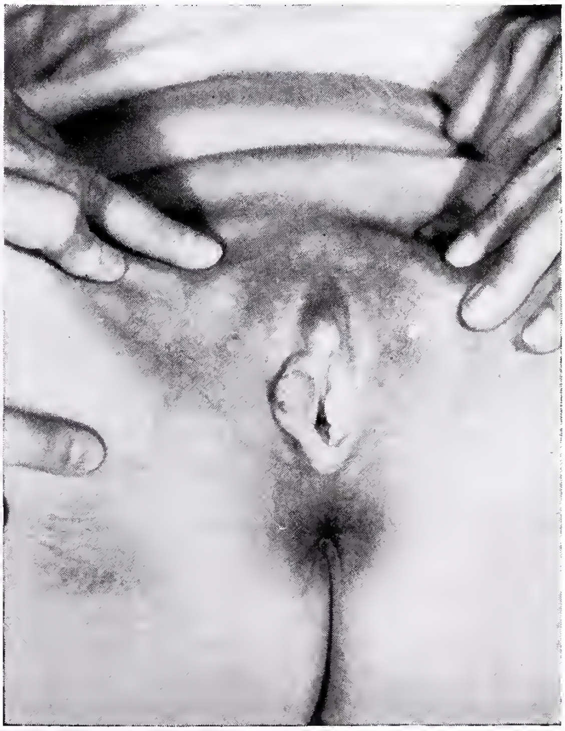

Fig. 3. I. C., age 74. A papilloma on right labia with extensive leukoplakia on left.

vulva that they operated upon leukoplakic vulvitis was also present. Many others have commented upon the close association of these conditions. In America, Taussig[9] probably has written more than anyone on this. He has found that 50 per cent of cases of leukoplakic vulvitis develop into cancer. In the present series of 33 patients, 12 were found to have definite leukoplakia when first seen by the authors. Since many of these had been treated elsewhere previously, the appearance of some was probably so altered that leukoplakia, if present, could not be recognized.

The important thing to remember about the symptoms or signs of cancer of the vulva is that, like cancer in most other locations, the beginning symptoms are generally slight and seem insignificant and may be indicative of other conditions such as diabetes, which in some instances has the initial symptom of pruritis vulvae.

The most common initial symptom or sign is pruritis or the presence of a lump. The itching in most instances is usually intermittent. Later, it becomes continuous and likewise may be present for a long period. A lump or an ulcer may appear as the initial symptom or later. Bleeding seldom occurs until the later stages. In our group, itching was the first symptom in 9 patients and a lump the first in 9 patients. An ulcer was present in 5 patients, bleeding in 3, and burning in 2. In one the burning was present only at the time of urination. Other symptoms of onset were tenderness, nonbloody vaginal discharge, and what the patient described as a "pimple."

Pruritis in one instance was present for at least 19 years and in 3 others for over 10 years. A lump had not been noted longer than 2 years in any instance, and all but 2 were less than one year in duration. An ulcer was said to have been present for 13 years in one patient and for 3½ years in another; in the remainder for 6 to 8 months.

It is to be noted that pain was never an early symptom. As the disease progresses, pain is experienced, which often becomes severe as the disease becomes advanced. Other symptoms also become marked in the advanced stage, notably soreness with difficulty in walking. Difficulty in urinating or defecating is encountered as the disease approaches the urethra or anus. Swelling of one or both legs supervenes when metastatic involvement of the inguinal and femoral lymphatics becomes marked. Bleeding in the late stage of the disease may be profuse. One patient in this group bled to death from inguinal metastatic ulceration.

The disease manifests itself almost invariably as an ulceration. Ulcers which may need to be differentiated are tuberculosis, soft chancre, syphilitic ulcers, erosive vulvitis, the Lipschutz acute ulcer, and granuloma. The ulcer may be the proliferating papillomatous type with definite overgrowth of tissue or it may be the everted-edge lesion with central destruction of tissue. In either instance there will be some induration around the base. The lesion, if early, will be small and confined to one side of the vulva. The vagina is almost never involved except when the disease is very advanced. Occasionally the ulcers will be multiple; leukoplakia is very often present as well. Cancer developing in leukoplakia assumes the form of a crack, fissure, or small ulcer in a leukoplakic area. A swelling of one Bartholin gland after the menopause may be the first sign of cancer arising in such a gland.

A benign papilloma which is undergoing malignant change will suddenly start to grow and it may ulcerate as well. The base will soon become indurated.

Metastatic tumors occasionally are encountered. They are nearly always nonulcerated swellings and may be multiple. Generally, they metastasize from the uterine cervix or fundus.

Every patient suspected of having carcinoma of the vulva should have a Wassermann test. A study of smears made from the lesion is sometimes of value, but most important of all is the removal of tissue for biopsy. The earlier the

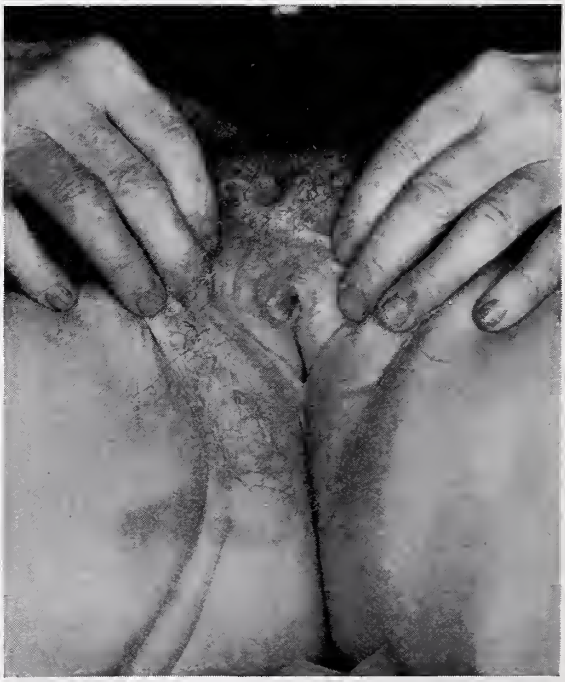

Fig. 4. A. F., age 72. Squamous carcinoma of right labium minus.

diagnosis is made and treatment planned and undertaken, the better will be the results.

Except for a few rare instances of teratoma, malignant tumors of the vulva may be classified (Taussig[2]) as sarcoma, melanoma, and carcinoma. Sarcoma of the vulva is a very malignant tumor and is rare. Melanoma of the vulva is somewhat more common and very malignant. It occurs more often in dark-skinned and Jewish women. Carcinoma of the vulva is the most frequent form and may be divided into the epidermoid and glandular types. The former is the most frequent and is usually of the squamous type, as was noted in this series. There is an occasional medullary type springing from undifferentiated epithelial cells.

Carcinoma of the vulva usually progresses rapidly and metastasizes early, the metastases being most frequent to the inguinal nodes, but is seldom found beyond this point. In 5 of our patients the metastases were to both inguinal regions, while in 2 the metastases were contralateral. These were proven histologically. There were others in whom the nodes were palpable, but we were denied the opportunity of examining these histologically. In 8 of our patients upon whom necropsies were performed, only 2 had generalized metastases, 1 to the liver and 1 to the lungs. Turner and Jaffeé[10] report 10 patients upon whom necropsies were performed, 2 of whom had pulmonary metastasis and none had osseous metastasis. In the literature there are no reports of large groups of necropsies of patients with this disease from which to draw any definite conclusions.

For treatment purposes we should consider carcinoma of the vulva a disease which has invaded the inguinal nodes from the beginning. Because an inguinal node is palpable is not an indication that metastasis has occurred, and conversely, because one is unable to palpate a node does not necessarily prove that metastasis has not occurred. Very often though, from the size and hardness of the palpable nodes, one may be sure that metastasis has already taken place.

The treatment of this disease is not one of ointments, salves, electrocoagulation, or of radiation. Surgery is the treatment of choice in all operable patients. Stoeckel[11] in 1910 and Kehrer[12] published methods for removal of the pelvic lymph nodes, either extraperitoneally or intraperitoneally, in carcinoma of the vulva, and in 1912 Basset[13] described a wide dissection for the treatment of carcinoma of the clitoris. More recently Taussig has advocated a radical procedure involving a bilateral vulvectomy, wide inguinal dissection, and extraperitoneal removal of pelvic lymph nodes. In spite of this emphasis upon the surgical removal of metastatic areas, many patients are still treated by a restricted operation involving only local removal of the primary lesion.

Fig. 5. M. T., age 53. Unusually large inguinal nodes both visible and palpable.

We agree with Taussig that radical operation, i. e., bilateral vulvectomy and bilateral inguinal dissection, should be carried out whenever possible. This generally is best done in multiple stages since so many of the patients are poor operative risks. In view of the very few metastases above Poupart's ligament found at postmortem examination, we do not divide Poupart's ligament or carry the dissection above it, although the gland of Cloquet is always looked for and removed if present.

The concept of inguinal dissection varies widely; for cancer surgery it should never consist of a simple enucleation of the glands, but rather a removal of all the soft tissues immediately surrounding them, together with the saphenous vein.

The technic of radiation has progressed very rapidly, but there are malignant tumors which arise in some areas which do not respond satisfactorily in relation to the amount of treatment the normal tissues in the affected area can tolerate. Carcinoma of the vulva is such a tumor. At least in some instances this is not because the tumor itself is so radioresistant, but rather is due to the marked radiosensitivity of the skin and mucous membrane of the vulva. The histology of the vulva differs from the integument elsewhere, in that it is covered with a very thick, stratified, squamous epithelial layer, beneath which are numerous hair follicles. Irradiation required to completely destroy the malignant lesion is so great that the normal tissue generally is damaged beyond repair. Furthermore, we are not aware of any histologically proven metastatic

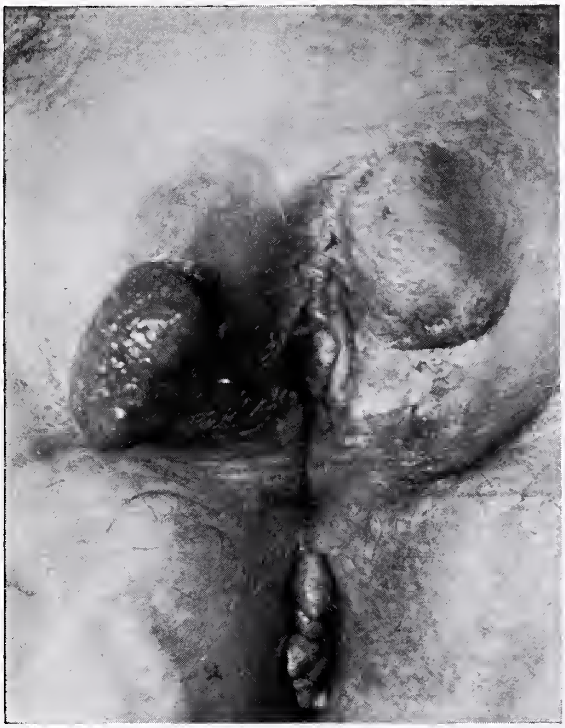

Fig. 6. R. M., age 52. Multiple carcinoma of vulva before operation.

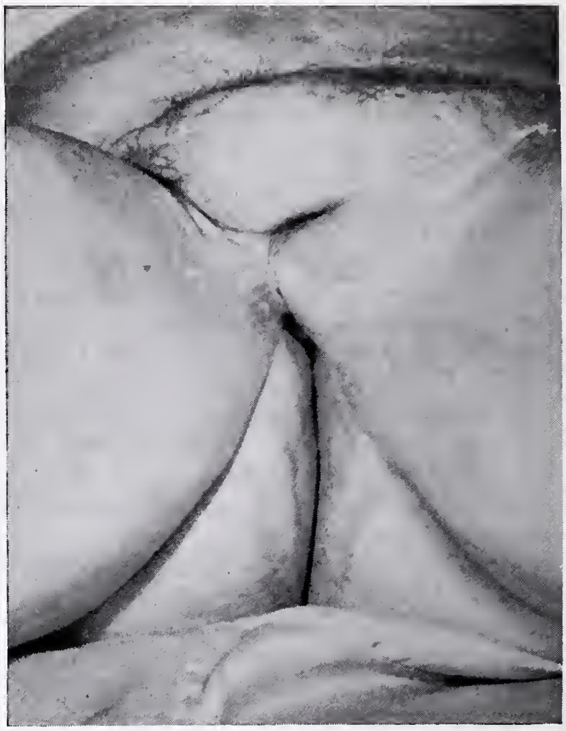

Fig. 7. R. M., age 52. Same case 4 months after bilateral vulvectomy and inguinal dissection.

inguinal nodes secondary to carcinoma of the vulva which have been cured by radiation.

Stoeckel[14] reviewed the literature from 1880 to 1930, and from the figures he compiled he concluded that operation gave 36.6 per cent lasting cures, while radiation gave but 11.9 per cent lasting cures.

D. den Hoed,[15] an experienced radiologist, reported in 1936 that 35 per cent of his patients were living and well over 5 years by complete or partial vulvectomy with preoperative or postoperative radiation and removal of the glands.

Ivan von Büben[16] in 1936 reported 28.5 per cent of 5-year cures by surgery, and 13.3 per cent short-period cures by irradiation in the inoperable group.

Schreiner and Wehr[3] reported 18 per cent 5-year cures by a variety of methods—surgery, coagulation, or a combination of these with irradiation.

Taussig[17] in 1936 had 55 per cent of his patients living and well 5 years by radical operation.

It is to be noted that the best results are from Taussig's clinic.

Of the 33 patients whom we have seen, 2 received no treatment, and 4 received some form of treatment elsewhere and none by us. All of these 6 patients are dead; they lived from 9 to 20 months from the onset of the first symptom. In the third group there were 6 patients in whom some form of radiation and surgery was given elsewhere and radiation was given by us. All of these are dead. Their length of life was from 10 to 48 months from the onset of the first symptom. In the fourth group there were 8 patients who received some form of radiation or surgery elsewhere and radiation or surgery by us. Of this number, 5 are living and well 9, 6, 4, 3, and 2 years respectively; 3 are dead, their length of life being from 18 to 35 months from the onset of the first symptom. In the fifth group there were 13 patients, all of whom were given their initial treatment by us, and this consisted of radical surgery; 9 are alive, 1 for 9 years, 1 for 5 years, 6 over 4 years, and 1 over 2 years since the beginning symptom; 4 are dead, their length of life varying from 13 to 41 months. Of the 20 patients who are dead, the length of life in 3 is not definitely known because of insufficient information concerning the onset of the disease; 2 lived 4 years, 2 lived 3 years, and the remaining 13 lived from 3 to 28 months.

From our experience with these patients, we believe that we may expect more improvement when the patient is treated if treatment consists of surgery alone and in a radical form. The combination of irradiation and surgery for treatment of carcinoma of the vulva has nothing to recommend it. We urge that all operable cases be given the benefit of radical surgery as soon as possible after a diagnosis has been made.

Conclusions

1. A prompt diagnosis and early adequate treatment will bring about a marked increase in the cures of this disease.

2. Radiation very seldom cures the disease and frequently delays the institution of proper treatment to such an extent that cure becomes impossible.

3. Radical surgery should be carried out in every operable patient.

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ABSTRACT OF DISCUSSION

Charles A. Behney (Philadelphia): From the time of the organization of the Radiologic Department of the Philadelphia General Hospital, in 1922, until January, 1940, 79 patients with carcinoma of the vulva were seen in that clinic. Most of them were given some form of radiologic treatment. Many were too far advanced to tolerate surgical measures or even full therapeutic radiologic dosages. Twenty-six per cent lived less than a month after their first examination, and received no treatment at all. Sixty per cent lived less than 6 months. Thirty-nine patients were considered suitable for more extensive treatment. The more advanced were treated radiologically. The less advanced were given high voltage x-ray therapy and vulvectomy, and removal of the superficial and deep regional lymphatics as recommended by Taussig was carried out. A few were treated by electrodesiccation of the primary tumor, without removal of the lymphatics, and x-ray irradiation. Radium packs were applied to several patients, but this procedure was abandoned because of its destructive effects on the integument.

Six of these 39 patients are still alive and free from symptoms from 5 to 16 years after treatment. One other patient died from cardiac failure after having been arrested for 6 years. Another died 12 years after treatment at the age of 72 years, without recurrence. Her death was attributed by the staff at "Byberry" to generalized arteriosclerosis. Four of these patients were treated by vulvectomy and high voltage x-ray therapy. Two received radium packs in addition to high voltage x-ray therapy, and one patient was treated with radium packs and deep x-ray therapy without vulvectomy.

The pathologic diagnosis was squamous cell carcinoma in every patient who survived the 5-year period. It is our impression that while radical vulvectomy is the important feature of the treatment of carcinoma of the vulva, high voltage x-ray therapy is a valuable adjunct.

Thirteen of our patients were necropsied. In 4 of these, histologically proven metastases were found in more distant situations than the inguinal nodes, the vagina, the rectum, or the bladder.

The metastatic sites were the lungs, pleura, liver, spleen, adrenals, kidneys, and nodules in the skin of the thigh. The occurrence of distant metastases, 31 per cent, is very similar to that found in studies made of patients who died of carcinoma of the cervix, in which the frequency was 33 per cent.

We are not in complete accord with the authors' statement that treatment of vulvar malignancy is not difficult. The selection of patients able to survive vulvectomy requires rare judgment. The proper performance of the operation demands surgical skill and speed. The wounds seldom heal by first intention and call for careful and frequent dressings. Most of these patients are old and must be watched closely for complications which are so frequent in the bedridden aged.

Two of our patients interested us because repeated biopsies from the primary growth failed to reveal malignancy. However, it was easily recognized in the sections from the inguinal lymph nodes removed in the course of radical vulvectomy. During the existence of our clinic, a period of 18 years, we have seen one case of sarcoma of the vulva. This patient has remained symptom-free 8 years after vulvectomy and high voltage x-ray therapy. In our clinic, therefore, the incidence of sarcoma as compared with carcinoma of the vulva was as 1 is to 79.

In Teahan and Wammock's statistics, salvage is dated from the time of the occurrence of the first symptom. This method of evaluation is a fair one since the greater the interval before treatment is instituted, the smaller is the probability of a cure. However, since the time of treatment is often used as the date from which survival is calculated, this difference should be borne in mind in making comparative studies.

Taussig's results, 55 per cent 5-year cures, are still the best record with which we are familiar in the treatment of vulvar carcinoma. In comparing his results with those from other clinics, it should be remembered that Dr. Taussig is a specialist within a specialty. He is a gynecologist who specializes in diseases of the vulva. His meticulous study of all vulvar diseases includes histologic examinations of every such lesion seen by him, and has enabled him to uncover a large number of incipient vulvar carcinomas which could not have been recognized grossly. This explains in part the discrepancy between his salvage rate and that of most other clinics. His results also reflect his exceptional skill in performing extensive dissections of the regional lymph nodes. In other words, Taussig sees more early carcinomas of the vulva than most gynecologists do, and treats them promptly, thoroughly, and capably.

There is a lesson in all of this for everyone who deals with carcinoma, particularly of the vulva. End results in the treatment of malignant diseases depend more on the degree of involvement than on any other one factor. No matter how skilled one is, a high rate of cures cannot be achieved unless a large percentage of the lesions treated are early ones. Every lesion of the vulva should be suspected of being malignant and a specimen from it examined microscopically. By so doing, many unsuspected early lesions will be recognized when a cure is still possible. Education of the lay public and the general practitioner regarding the potentialities of vulvar lesions must be continued so that these diseases will reach the individuals who are capable of carrying out the studies necessary to bring about the detection of vulvar carcinoma in its earliest stages.

Dr. Wammock (in closing): There is much debate about the sensitivity of lymph nodes to irradiation therapy. Taussig has had an opportunity of examining a large number of lymph nodes in the pelvic area which have been subjected to irradiation. The normal lymph nodes showed some changes in the lymph follicles, whereas in the metastatic nodes there was evidence of increased resistance to irradiation.

In the first part of the paper it was stated that the diagnosis and treatment of carcinoma of the vulva was not a particularly difficult problem. The inference by this statement is that carcinoma of the vulva is accessible for diagnosis and treatment and therefore the results should be correspondingly better.

The basis for stating the length of life from the first symptom instead of from the beginning of adequate treatment was to impress further that carcinoma of the vulva progresses very rapidly.

ROBIN C. BUERKI, M.D., APPOINTED DEAN AT UNIVERSITY OF PENNSYLVANIA

Dr. Robin C. Buerki, of Madison, Wis., a nationally-known authority in the fields of hospital administration and graduate medical education, will become dean of the Graduate School of Medicine of the University of Pennsylvania on Oct. 1, this year, when Dr. George H. Meeker, now dean of that school, will retire on age, it was announced recently by President Thomas S. Gates.

In addition, Dr. Buerki has been appointed director of hospitals of the University of Pennsylvania—a newly created post in which he will have direction over the University Hospital, the Graduate Hospital, and the Orthopedic Hospital.

Dr. Buerki, who is expected to come to Pennsylvania about Sept. 1, now is superintendent of all the hospitals under the jurisdiction of the University of Wisconsin, including the Wisconsin General Hospital; executive secretary to the dean of the Medical School of the University of Wisconsin, and professor of hospital administration of that school.

Dr. Buerki is a graduate of the University of Wisconsin and of the School of Medicine of the University of Pennsylvania, Philadelphia. Following his graduation from the medical school in 1917, he was an intern and chief resident physician at the University Hospital in this city for a time.

He also served as a first lieutenant in the Army Medical Corps and later engaged in private practice in Boise, Idaho, and Burns, Ore., before becoming associated with the University of Wisconsin in 1923.

Dr. Buerki is a charter Fellow and a former president of the American College of Hospital Administrators, was on the Executive Committee, and is a member of the Committee on Future Program and Policy. In 1935-36 he was president of the American Hospital Association and he has served at various times as chairman of the Council on Professional Practice, as secretary-treasurer of the Advisory Council on Medical Education, as chairman of the Advisory Committee to the United States Children's Bureau, and as a member of the Commission on Hospital Service.

He also has held membership on the executive committee of the Advisory Board for Medical Specialties, and from 1938 to 1940 he was engaged in directing a comprehensive survey of graduate medical education for the Commission on Graduate Medical Education. In 1940 he was president of the Tri-State Hospital Assembly.

Dr. Meeker has been dean of the Graduate School of Medicine at Pennsylvania since 1919, when that school was opened, and also has served as manager of the Graduate Hospital, professor of chemistry in the School of Medicine, and professor of biochemistry in the Graduate School of Medicine.

Long a distinguished figure in the teaching and administrative fields, Dr. Meeker was the recipient of the honorary degree of Doctor of Science at the University of Pennsylvania's commencement exercises last June, and he holds the same degree from Villanova College. In addition, he has received the honorary degree of Doctor of Laws from Ursinus College and Lafayette College. He was graduated from Lafayette College in 1893 with the degree of Bachelor of Science.

ANNUAL GOLF TOURNAMENT

After consultation with Dr. Frank A. Lorenzo, of Punxsutawney, president of the Golf Association of The Medical Society of the State of Pennsylvania, this preliminary notice of the annual golf tournament to be held on Monday, Oct. 6, 1941, is issued to remind those members of our state medical society who indulge in this ancient and honorable game that the 1941 tournament will be held on the South Hills Country Club course, twelve (12) minutes' drive from the headquarters of the State Society convention—Hotel William Penn.

The chairman of the Golf Committee suggests that all golfing members mark this date as very important. The committee will endeavor to make this tournament and the golf dinner which follows in the evening the most attractive yet held.

The September Pennsylvania Medical Journal will give all the final details, but you may rest assured that the course is challenging, the clubhouse spacious, and the cuisine excellent.

Frank C. Blessing, M.D.,
Chairman, Golf Committee,
5208 Second Ave., Pittsburgh.

Spontaneous Cerebrospinal Rhinorrhea

GEORGE B. JOBSON, M.D.
Oil City, Pa.

CEREBROSPINAL rhinorrhea is a condition in which cerebrospinal fluid escapes from the cranial cavity by way of the nose. Of etiologic factors, the first is trauma either from injury or intranasal surgery. As the opening through which the fluid passes can usually be demonstrated in traumatic cases, these will not be discussed in this paper.

The next factor is intracranial pathology, with tumors ranking first as a cause of the spontaneous type of cerebrospinal rhinorrhea. A very few cases of this type are of unknown origin. The subject of cerebrospinal rhinorrhea is frequently ignored in textbooks on rhinology. If it is mentioned at all, the subject is usually given brief consideration. More serious attention should be given to it, as cases have been mistaken for nasal hydrorrhea, with the result that unnecessary and dangerous intranasal treatments have been administered. Cerebrospinal rhinorrhea was recognized and described by Thomas Willis of Geneva in 1676. Charles Miller[1] of Edinburgh, in 1826, was the first to show definitely that cerebrospinal fluid might escape spontaneously through the nose. St. Clair Thompson[2] presented a noteworthy monograph on this subject in 1899. He reported one case of his own and collected 8 undoubted cases of cerebrospinal rhinorrhea from the literature.

Except in traumatic cases, the most common route for the escape of cerebrospinal fluid is through the cribriform plate of the ethmoid bone, the cause being pathology of the contents of the skull, so situated that the cerebrospinal fluid circulation is interfered with, to the extent that there is increased intracranial pressure. The cribriform plate, which is vulnerable to the increase in pressure, may become necrotic and allow the cerebrospinal fluid to escape into the nose. Dehiscence of the walls of the sphenoid has been mentioned as a means of escape also. In some cases of spontaneous cerebrospinal rhinorrhea, no localized lesions have been found.

Prof. J. Wagner Jauregg[3] states that "sneezing may increase the patency of the microscopic openings of the cribriform plate of the ethmoid bone, thus allowing better communication between the interior of the skull and cavity of the nose."

Symptoms

The first symptom is a discharge of watery fluid from the nose. It may be continuous or intermittent, and usually comes from one nostril. In contrast to the fluid of nasal hydrorrhea, which is slightly opalescent and viscid, that of cerebrospinal rhinorrhea is clear and watery and does not stain or stiffen the handkerchief. It is free from odor, and is tasteless or slightly salty. The drip in nasal hydrorrhea is bilateral and ceases during sleep. Diagnosis rests on an analysis of the fluid, principally depending upon the following: Specific gravity is from 1.005 to 1.010. Reduction takes place on boiling with Fehling's solution.

Headache is often complained of, and is generally relieved by the nasal discharge. Eye symptoms are of frequent occurrence, but are not always present; they depend on the situation of the lesion and the intracranial changes.

The prognosis is very serious, owing to the close proximity of the causative factor to vital cranial structures, which renders the patient liable to meningeal infection at all times.

Whenever a patient gives a history of a thin watery discharge from one nostril, remember the possibility of cerebrospinal rhinorrhea. If a diagnosis of either the traumatic or spontaneous type is made, warn the patient of the seriousness of his condition and the necessity of determining the cause of the rhinorrhea. The treatment of these cases, whether operative or conservative, demands the exercise of the best clinical judgment. If an operation is indicated from the pathology, one should not hesitate, as operative intervention by modern means may offer the best chance of escaping intracranial infection. If conservative treatment is decided upon, the patient must be warned not to blow his nose, cough, strain, or sneeze. Small doses

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of sedatives will be helpful. He must stay in bed, in a sitting-up position. Moderate dehydration is indicated for lessening the cerebrospinal fluid, thereby aiding the healing of the fistula. Sulfanilamide or its products is administered if streptococcic infection is feared.

Case Report

A woman, age 50, consulted me on Feb. 21, 1939, complaining of a constant dripping of thin watery fluid from her right nostril, which had persisted for about 2 months. The rate of flow was increased when she leaned forward. One-half an ounce of the fluid was collected in a half hour. It did not stain her handkerchief nor stiffen it, was odorless and tasteless. A specimen submitted to Dr. Talcott Wainwright, pathologist of the Goodwin Memorial Laboratory of the Oil City Hospital, reported the following: "Clear, colorless fluid, specific gravity 1.008, 1 to 2 lymphocytes, 755 mg. per cent chlorides." The test indicated that it was cerebrospinal fluid. The patient had enjoyed good health, with the exception that at times she had severe and protracted spells of sneezing, accompanied by headache. This may have been the cause of her trouble later on. A general physical examination showed negative results.

The report of a stereo examination of the skull by Dr. Joseph T. Danzer, radiologist of the Oil City Hospital, was as follows: "The sella is normal; its floor is well shown and does not appear to be eroded. In the postero-anterior view the ethmoid cells appear normal; the anterior clinoid processes show no erosion. In the anteroposterior view there is a faint line of calcification posterior to the posterior clinoid processes. This is a common finding and no pathology can be attached to it."

An intranasal examination showed no abnormality except a bulbous anterior tip of the right middle turbinate. The fluid seemed to be escaping from between the left side of this turbinate and the nasal septum. The eye symptoms noted by Thompson, Schwab, and Greene as frequent occurrences were not seen in this case. Reports of the success of Galloway and Fox in the application of a solution of silver nitrate in a case each of spontaneous rhinorrhea prompted me to try a 10 per cent solution. This was dropped into the right nasal chamber with the head lowered. Considerable reaction occurred and the nasal drip stopped the next day. The headache and dizziness disappeared and the nasal drip stopped until Apr. 21, 1940, when the patient developed influenza accompanied by severe spells of sneezing and coughing, which caused a slight recurrence of the trouble in an intermittent form.

Fearing a return of the condition in an aggravated degree, the patient requested another treatment by the use of silver nitrate. The right middle turbinate was compressed so as to permit free access of the silver nitrate solution to the cribriform plate region. A 20 per cent solution was used instead of the previous 10 per cent. A severe reaction followed, accompanied by severe pain which lasted for several hours. There never has been a recurrence since the last treatment. The headaches, dizziness, and fatigue have not returned and the patient is apparently cured.

Comment

This was undoubtedly a case of spontaneous cerebrospinal rhinorrhea which was brought on by sneezing, as cited by Jauregg[3] in his article entitled "Something About Sneezing." The article states that sneezing may increase the patency of the cribriform plate openings, thus allowing the escape of cerebrospinal fluid along the perineural sheath of the olfactory nerves. I am convinced that at least a 20 per cent solution of nitrate of silver should be used to cause sufficient swelling of the mucous membrane to close the opening into the cranial cavity. Granulation will develop, followed later by the formation of scar tissue, with obliteration of the fistula.

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ABSTRACT OF DISCUSSION

Francis C. Grant (Philadelphia): I have not seen a case of spontaneous cerebrospinal rhinorrhea similar to that described. The cases we have encountered have followed operation particularly around the pituitary. One such case in particular I should like to report briefly.

A boy was operated upon by the late Dr. Frazier, in 1923, for a presumed cerebellar tumor. From 1927 to 1933 he had intermittent bouts of cerebrospinal rhinorrhea. Epileptic attacks developed and he finally died in 1938. The postmortem examination showed that he had a tumor in the neighborhood of the pineal gland blocking the lower end of the third ventricle. Apparently the cerebrospinal fluid had made new channels for itself around the tumor, thus re-establishing circulation. But, as a result of the marked internal hydrocephalus, the anterior end of the third ventricle was much dilated and had eroded downwards into the sphenoid cells destroying the posterior clinoid processes. It may be safely presumed that the intermittent rhinorrhea occurred as a result of the invasion of the sphenoid area and the increased intracranial pressure. As the cerebrospinal fluid circulation was re-established and intracranial tension relieved by the formation of new channels around the tumor, the leak stopped. For the last 5 years of his life no rhinorrhea was noted.

In this particular case nothing was done to stop the leak. I did not know enough to apply 20 per cent silver nitrate to the nose as Dr. Jobson has done so successfully. Whether this treatment would be effective in the presence of increased intracranial pressure as a cause for the leak is open to question.

The operative treatment of cerebrospinal rhinorrhea is difficult unless a fracture or other obvious lesion is present. Under such circumstances a transfrontal craniotomy could be done and an attempt made to repair the tear in the dura. But where the leak is spontaneous, without evident cause, proper placing of the operative flap would be a matter of chance. Under these circumstances the treatment recommended by Dr. Jobson seems the better procedure.

Any patient with the escape of cerebrospinal fluid from the nose from whatever cause should be warned not to cough or sneeze. Coughing or sneezing raises the intracranial pressure and may reactivate the leak.

Restoration of Function After Fractures of the Humerus

JOHN PAUL NORTH, M.D.
Philadelphia, Pa.

IF THE patient with a broken arm were given his choice between a perfectly restored contour of the humerus as shown by a roentgen-ray film and a useful arm which is strong and freely movable, there is little doubt which he would choose. The ideal, of course, would include both, but the two are not always compatible. Careful reduction and rigid fixation may insure bone repair, but are no guarantee of good functional recovery. It must be remembered that fracture of the humerus involves more than is visible on the roentgen-ray film and that the disturbances in the soft tissues are the principal impediment to functional recovery. At the time of injury there occurs contusion of muscles, laceration of ligaments, and extravasation into all the tissues. With the passage of time atrophy of disuse, contractures about joints, adhesions between gliding surfaces, and circulatory stasis develop. If the usefulness of the arm is to be completely regained with the briefest possible period of disability, the fundamental concern of treatment must be the repair of the primary damage to and the prevention of secondary changes in the soft tissues.

Reduction

Accuracy of reduction is essential in those fractures of the humerus which enter the elbow joint, but is less important in other portions of the bone. For example, at the surgical neck considerable deformity is compatible with full recovery of the use of the arm provided the shoulder is mobilized early. In the shaft approximate alignment with some contact between the ends of the fractured fragments is all that is required. At the supracondylar level, rotation or inclination of the lower fragment which disturbs the carrying angle should be corrected. Perfection of reduction is not as important in the humerus as it is, for example, in the forearm or in the weight-bearing bones of the lower extremity.

It is not the intent of the author to advocate casual reductions, and accuracy should be sought whenever possible, but repeated manipulations for the sake of securing exact reposition add greatly to the soft tissue injury and may be superfluous. Moreover, in order to maintain absolute alignment, it may be necessary to employ elaborate splints and apparatus which jeopardize the early recovery of function through enforced immobilization over a long period. It is essential to discriminate between a reduction which is satisfactory and one which is anatomic and not to be unduly influenced by what is shown on the roentgen-ray film.

Splinting

Splints or retentive dressings should serve the purpose of preventing displacement or refracture with the least possible interference with joint movements. They should be kept in place long enough to accomplish this aim, but no longer. The simpler the dressing, the more likely is it to achieve this end. For the majority of fractures at the surgical neck, the halter sling and chest swathe dressing are adequate. The weight of the dependent arm may be relied upon to a considerable extent to prevent overriding of the fragments. In cases with troublesome adbuction and rotation of the upper fragment, a plaster spica cast with the arm abducted may be needed until some bony healing is secured. Thereafter these cases also should be dressed with the arm against the chest using the halter sling or a hanging cast. Confinement to bed with continuous balanced traction is desirable only when ambulatory methods cannot be used and practically never is it necessary to resort to open reduction in simple fractures of the surgical neck.

Fractures of the shaft of the humerus, as is well known, are difficult to hold in proper alignment. For this reason, we have often in the past resorted to open reduction with internal fixation. Since adoption of the so-called hanging cast of Caldwell, we have discovered that most of these fractures can be treated quite satisfactorily by a closed, ambulatory method. The hanging cast is a circular plaster cast extending from the axillary fold to wrist with the

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elbow bent at a right angle. The arm is supported only by a narrow sling at the wrist and the weight of the cast tends to maintain length and alignment in the same way as do the weights of a traction apparatus. In certain respects the dressing is unorthodox, as it allows considerable motion at the fracture site which might predispose to delayed union. Nevertheless, this objection has proven theoretic rather than real and our satisfactory results from the method are in accord with the larger experience reported from the clinics of Caldwell, Griswold, and Laferté. An outstanding advantage of the hanging cast method is that pendulum movements of the shoulder may be started within a few days after injury and thus joint stiffness and muscle atrophy are avoided. It is common to find when the cast is removed that patients are able immediately to place the hand on the top of the head, a feat which would require several weeks to achieve if the shoulder joint had been completely immobilized throughout the whole period of healing. This cast also is less cumbersome than a shoulder spica and it allows the patient to wear regular clothing and to have the use of his hand.

Mobilization

It is extraordinary that so little emphasis is placed upon early voluntary motion, since this is the best and simplest way to restore normal function. Indeed, if active use of the arm could be continuous throughout convalescence, there would be no problem of restoration of function. The sooner a program of exercise is begun, the better. It should be well under way at the end of a fortnight, although common sense will dictate delay in certain cases.

Motion at the shoulder is started by having the patient bend forward and set his arm to swinging to and fro like a pendulum with the support only of the wrist sling. After a few days of this, abduction is encouraged by swinging the arm away from the body. Later the suspended arm describes circles and this circumduction exercise may be augmented by grasping a weight in the hand or spinning a pail of water. These exercises entail little risk of displacement of fragments as the weight of the arm exerts a tractive force. Difficulty is encountered when the patient is first called upon to raise his arm against the force of gravity. The surgeon may overcome the patient's lack of confidence and strength by supporting the weight of the latter's arm and then asking him to make an active effort to raise it. The patient may then do the same thing, but unless particularly instructed, he will attempt this by grasping his injured wrist rather than by placing his hand under the elbow of the injured arm where it will help to support it. The aim of these efforts is to touch the forehead and later to pass the hand over the top of the head to reach the back of the neck.

While these efforts are being expended upon abduction and external rotation, internal rotation can be encouraged by having the patient touch first the seam of his trousers, then place his hand in his side trouser pocket, and finally scratch his back. In the performance of these exercises, successive goals should be set up so that the patient will perceive his own progress. At each visit we measure and record in degrees (with the goniometer) the exact range of motion in each direction. This provides a graphic record and checks one's casual impressions which are often quite faulty. At these visits, definite instructions are given concerning exercises to be done and the number of times each is to be performed daily. Some discomfort may be experienced during exercise and is not significant, but pain persisting more than a few minutes afterward indicates that the program has been too strenuous. Likewise, a decrease in the range of motion previously attained should counsel caution. In the absence of these untoward symptoms, new goals in movement should be outlined at each visit to maintain the patient's interest. The familiar "climb the wall" exercise is a good one as it gives the patient a daily mark to shoot at, but it is applicable only at a relatively late stage of convalescence since it involves actively raising the unsupported arm. A sling with a rope passing through an overhead pulley by means of which the patient can use his well arm to lift the injured one overcomes this early handicap.

Re-education of the elbow is simpler, but cannot be pushed as vigorously as can the shoulder. Myositis ossificans or traumatic arthritis may be produced by too strenuous promotion. Fortunately, extension, which is the more difficult motion to regain, is promoted by gravitational forces if the arm is allowed to hang at the side. The patient may sit at a table or desk, resting his arm upon a pillow, and alternately flex and extend the elbow slowly. A simple system of weights and pulleys may be arranged for this activity, and carrying a weighted pail is also helpful if not overdone.

The foregoing is an outline of physiotherapy with the burden of responsibility placed squarely upon the patient. The author makes extensive use of physiotherapy in fracture treatment, but rarely employs a physiotherapist. There are several reasons for this. In the first place it ensures that exercise will be practiced several times each day rather than only at the infrequent visits to the physiotherapist. Second, the patient is not diverted into believing that electrical devices or elaborate paraphernalia are essential or more important than the simple but less spectacular measures at his own command. Third, the physiotherapist may actually do more harm than good, especially with deep massage, unless he is unusually experienced.

Massage has its greatest value during the first week or two after injury as a means of hastening absorption of exudate and stimulating the circulation in the traumatized area. It is a gentle stroking of the swollen part which avoids the actual fracture site and produces no pain. It is best administered in brief sessions several times daily. Since a trained masseur cannot be constantly available, it is convenient as well as satisfactory to have it given by the nurse or a member of the family. After the acute phase has passed, heat and massage play only a minor rôle and the prescription of baking and massage as it is frequently given during the late stages of convalescence is of no great value.

Psychotherapy is an important element in this program for restoration of function. The patient must be imbued with the will to get well and be convinced that his own active efforts will largely determine the outcome. Although some in anticipation of compensation or insurance benefits are reluctant to co-operate in this scheme, most people are sincerely anxious to overcome their disabilities. They are deterred by dread of the pain which active exercise may produce and by the fear of doing themselves harm. These fears the surgeon must endeavor to allay by explanation and by patiently supervising the active endeavors.

A discussion of methods of functional restoration would be incomplete without reference to the value of occupational therapy. Creative work is always more fun than any system of calisthenics, and in concentrating upon it joints and muscles are moved quite unconsciously and without fear of the consequences. A trained occupational therapist is an asset for she will keep the patient interested despite initial awkwardness and will assign work in accordance with his abilities. Much may be done, however, even without trained assistance, for there are a surprising number of homely crafts and tasks which aid shoulder and elbow motion.

Conclusion

The early and complete recovery of normal use of the arm should be the chief aim of treatment of fractures of the humerus. Satisfactory if not perfect reduction, simple dressings, and early active mobilization combine to accomplish this end.

ABSTRACT OF DISCUSSION

Robert R. Impink (Reading): The portion of this paper of most interest to us is the use of the hanging cast in trying to bring about more rapid restoration of function. This principle does not sound as if it were reconcilable with the best principles of fracture treatment in that there is no rigid immobilization of the two points of fracture. Yet the scheme seems to bring about very satisfactory results. There are certain types of cases which we consider better fitted for this hanging cast type of treatment. The first group are the elderly patients who cannot stand an anesthetic, and who cannot be confined to bed for any length of time without running into the complications that are prone to develop in elderly patients. The second group are those who cannot tolerate the weight of a body plaster and shoulder spica. There is a third group who cannot be fitted properly on account of obesity or who refuse to wear any cumbersome plaster or apparatus. In the fourth group are the people who because of economic conditions cannot be given the advantage of hospitalization for open reduction and internal fixation or continuous traction therapy. There is a fifth, and perhaps the largest group, composed of those in whom the hanging cast is used because of the ease of application. It is a relatively simple way of fixing the fracture of the shaft of the humerus and also the fracture of the surgical neck, and can be utilized by physicians not specially trained in the use of plaster. If there is trouble in applying a plaster shoulder spica, we feel that this hanging cast is an excellent method to substitute.

Just a word about other methods which I believe do give just as rapid restoration of function if the operative setup is proper and available. An open reduction and rigid fixation of a fracture of the shaft of the humerus, followed by the proper physiotherapy, will give as quick a restoration of function as any method which is available. In some cases continuous traction, with a wire through the olecranon, with constant mild radiant heat therapy, and light stroking massage, will permit restoration of function as rapidly as a hanging cast or one of the other ambulatory methods.

As to physiotherapy, I agree fully with Dr. North that the most important time for it is shortly after the reduction has been performed while the blood and lymphatic vessels are able to carry away the fluid and other products of injury. If treatment is delayed for several days after the fracture, it will be very ineffective because the organization of the damaged tissues will have begun. Physiotherapy should be used as a prophylactic rather than a curative measure.

Regarding mobilization, active exercise is the crux of that problem, and it should be shouted from the roof tops. It can be accomplished only by the patient himself. No gadgets or apparatus will take the place of active exercises on the part of the patient. Careful instructions regarding the extent of the exercises and the timely interest of the physician will help greatly in bringing about a good final result. Occupational therapy, which Dr. North has mentioned, has made patients who were perfectly helpless in doing active exercises take their minds off the exercises and concentrate them on the task set them. It has yielded amazing results.

I had hoped to show you the roentgenogram of one case, a negro who had a 4 cm. long spiral fracture of the humerus. A hanging cast was applied within several hours after admission to the hospital, the roentgenogram having shown a fracture in the middle third of the shaft. The apposition of the fragments looked fairly good. The man had a hanging plaster cast on for a few weeks when he complained that it was uncomfortable. On removing this plaster for investigation, we found that the fragments were fairly well aligned, and a second hanging cast was applied. This was removed by the patient at the end of 6 weeks because it was uncomfortable. At that time we found a tremendous amount of callus, but almost complete mobility at the site of fracture. At operation it appeared that there had been some muscle between the 2 fragments from the very start. A 6-screw plate was used for fixation and union has been obtained. We erred in this case in putting on the hanging cast without being sure that there was no muscle interposing between the fragments.

NEUROPSYCHIATRIC DISORDERS AND THE SELECTIVE SERVICE BOARD PHYSICIAN

The casualties of World War I were not accounted for only in the number of men killed and physically injured. Under the strain of military service and warfare, thousands of men broke down nervously so as to be useless in the fighting forces, and a large percentage of these, as chronic mental or nervous invalids, have been cared for ever since at governmental expense.

If the occurrence of such casualties were in no way predictable, if the man who is destined to become shell-shocked were as much subject to the laws of chance as the man who is killed or physically injured in a certain engagement, the whole matter of nervous invalidism under conditions of war would have to be considered one of the inevitable contingencies and unpreventable circumstances of the abnormal situation.

Statistical data relevant to neuropsychiatric disorders that developed in the United States Army during the last war indicate, however, that in an arrestingly large percentage of such disorders there had been a history of nervous or mental instability or neurologic defect long before the men entered military service. As reported in an article in this issue of the *Journal*, 85 per cent of 50,000 patients with neuropsychiatric disorders that apparently developed during the term of service had had symptoms relating to the disorders for at least 5 years before the beginning of military service. Furthermore, of a total of 69,394 neuropsychiatric patients found in examination of 3,500,000 soldiers, 96 per cent had disabilities that did not arise in line of duty.

Such evidence is conclusive proof that so-called "shell shock" does not come out of the sky, hitting this man or that man unpredictably, as shell fragments or bullets do. The significance of the experience gained from the last war is, of course, that adequate neuropsychiatric examination of the men about to be inducted into service will probably in large measure eliminate those who may become a liability in the country's defense and who may become a drain on governmental funds for years to follow. The importance and common-sense necessity for alertness and awareness on the part of the examining physicians concerning signs of nervous instability, mental deficiency, and neurologic disease in the men who are being examined cannot be too strongly emphasized.

Because of the haste created by the present national emergency, men are being inducted into the United States Army following a relatively superficial examination. As a rule, they do not see a specialist in neuropsychiatry until they arrive at the induction station, just prior to going to camp. The induction examinations are necessarily hurried, and their adequacy depends chiefly on the acuteness, clinical acumen, and extent of readily usable knowledge of the individual neuropsychiatrist.

It is these circumstances that make the position of the examining physician for the local Selective Service board so relatively important. If he has in mind not only the finding of physical disease but also personality reactions and evidence of neurotic or psychotic tendencies and of subaverage intelligence, he himself may see reason to reject the unsuited man. If he is not able to decide on the fitness of the candidate, he has recourse to the medical advisory board, which has the time and facilities necessary for thorough examination.

Expert skill is not required to make the local board physician watchful for indications of handicapping neurotic traits or of low mental caliber. A few simple questions about emotional reactions and school and work records will at least suggest whether further investigation is advisable. It is a mistake for the physician to shy away from considering personality disorders because of the misconception that this field belongs only to specialists. Most doctors have had sufficient experience with human nature to entitle them to the privilege of questioning the intelligence or the stability of the people with whom they come in contact. No harm—quite the contrary—is done by questioning, especially when it occurs before the final rush of induction board activities.

The matter of mental deficiency should be carefully considered. The often-expressed idea that physically husky morons make the best soldiers is a fallacy. As a matter of fact, 12 out of every 1000 men examined in draft and camp groups in the last war proved to be unfit as soldiers because of mental deficiency. The warfare of today is said to depend more than previously on individual initiative and intelligent co-operation; if this is true, the mentally deficient constitute even more of a liability. It is to the credit of the Boston Area Induction Board that a psychometrist is included in its medical personnel; he is able to judge the intelligence levels in doubtful cases.

Unfortunately, there seem to be no effective measurements for the quick determination of a man's capacity to fulfill the vocational duties of a soldier, even though the man is emotionally sound and of average intelligence. However, the evidence is that a workable ideal will be more nearly attained if men who are known to have personality defects are eliminated rather than put to the test of being made soldiers.—*The New England Journal of Medicine.*

Doctors produce neuroses! Can this be true? Is the answer projected on page 1353 true of your practice?

SYMPOSIUM ON RHEUMATOID DISEASES

Pathologic Aspects of Rheumatoid Diseases

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Abington, Pa.

RHEUMATOID disease is one of the most common and widespread causes of physical disability, but because it does not occupy a prominent place in mortality statistics its importance has been woefully underestimated. In the evaluation of economic losses caused by a disease, we must estimate not only the number of deaths but also the incapacitated and crippled. A study by the Metropolitan Life Insurance company reveals that 164 persons in 100,000 suffer from rheumatism; this represents 9 per cent of all causes of disability. A survey by the United States Public Health Service shows (1936) that in our country 6,800,000 people suffer from arthritis, 147,000 of whom are invalids. This is 10 times more than the incidence of diabetes or tuberculosis.

The English for several decades have been fully aware of the magnitude of the rheumatoid disease problem. Already before the first World War "The Cambridge Committee for the Study of Special Diseases" selected arthritis as the medical and social problem in the greatest need of investigation. The American Committee for the Control of Rheumatism, organized in 1928, has done important spade work towards more adequate study and solution of this many-sided problem. So far, only the State of Massachusetts has in operation a comprehensive plan for the control of this disease. It is high time for public health organizations and similar agencies in other states to do likewise.

From the purely medical point of view, rheumatoid disease presents many angles and phases requiring investigation and elucidation. Unfortunately, pathologists in general have not been particularly interested in this syndrome and the knowledge we possess is due to the efforts of comparatively few workers. Co-ordinated systematic investigations on a larger scale undoubtedly would help in our understanding of this almost all-embracing problem.

The heading of "Rheumatoid Diseases" embraces several subdivisions, such as traumatic, trophic, tuberculous, septic, and arthritic. This presentation, for convenience's sake, deals essentially with the large arthritis group, which does not fall in any of the above groups and has been associated for centuries with the name of rheumatism or arthritis deformans.

It would be a serious mistake to consider arthritis as a disease involving only the joints. The American Committee has stated emphatically that "Arthritis is a generalized disease with joint manifestations." There is ample evidence to support this concept; most arthritics show a tendency to lower basal metabolism rates, changes in albumin-globulin ratio, lowered sugar tolerance, abnormal sedimentation rate, and formol gel formation. Their circulation, generally speaking, is slowed down as shown by reduced surface or skin temperature and reduced numbers of capillaries with narrowed lumina at the nail bed.

In our present state of knowledge, it is difficult to name the etiologic factor or factors and to enumerate in detail the sequence of events in the very early stages of arthritis, but whatever the cause, once the arthritic process has started, it tends to continue. In about one-half the cases the onset is gradual, and in the other half, fairly sudden. In the latter group the history usually discloses a precipitating factor such as exposure to cold and wet, severe infections, and trauma.

A number of investigators have cultured streptococci from the blood and synovial fluid of arthritics, but these findings have not been confirmed and it is generally accepted that in uncomplicated cases of arthritis these fluids are sterile. The occasional finding of bacteria in the blood streams of these patients may be due to the liberation of showers of bacteria from traumatized infected foci as shown by Okele

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and Elliott in England, and F. M. Burnett of Yale, and confirmed repeatedly in our laboratory.

Focal infections have been found in Pemberton's Clinic in about 80 per cent of cases. It is difficult to say what particular or specific rôle they play in the production of this syndrome. Certain it is that bacterial toxins are elaborated in these foci, and what is to prevent them from reaching the joints? Further, the prolonged liberation of toxins from the foci may act like repeated intravenous injections of toxins and produce certain systemic reactions, as inversions of the albumin-globulin ratio, destruction or inactivation of vitamin C, increase in sedimentation rate, secondary anemia, etc. (Inversion of albumin-globulin ratio occurs regularly in animals receiving bacterial proteins or toxins for the purpose of producing antibacterial sera or antitoxins.) It seems reasonable to assume that focal infections in arthritics play at least a conditioning rôle or act to prepare the joints for the trigger action of some precipitating factor.

Parallelism between arthritis and arteriosclerosis is more than a coincidence and the understanding of the mechanism of the production of the initiating lesions of one will help to solve the other. Necrosis of muscle and elastic tissue fibers in the subintima of the aorta antedates the proliferation of connective tissue and calcification. The necrosis apparently is brought about by the impairment of blood supply due to the swelling or necrosis of the endothelial cells lining the vasa vasorum. This has been demonstrated in cases of malnutrition with vitamin C and B deficiencies, hyperparathyroidism, and severe infections. Is it not conceivable that some similar mechanism interfering with the normal blood supply and nutrition of the structures of the joints might initiate the very early pathologic changes in the joints of arthritics? Once the process has started, it will continue to progress with its development, the characteristics of the lesions depending on local and systemic factors. It is apparent when we consider the clinical manifestations and laboratory observations that many distinct factors must operate separately and maybe synergistically to produce the syndrome of arthritis.

The joint lesions in arthritis, as has been recognized for many years, can be divided into two main types. Knowledge of these types is essential for the understanding of the disease as a whole and the correct interpretation of pathologic changes observed in the joints. Practically all the manifestations of this syndrome fall in one or the other group or the combinations of both.

The first type to be considered is *atrophic arthritis,* described by Nichols and Richardson as *proliferative arthritis* and known to the English as *rheumatoid arthritis.*

The second type is *hypertrophic arthritis,* described by Nichols and Richardson as *degenerative arthritis* and known to the English as *osteo-arthritis.*

There has been and still is considerable confusion in the terminology. Nichols and Richardson introduced the terms of proliferative and degenerative arthritis as being descriptive of the inaugurative pathologic processes, but the terms suggest a process and appearance opposite to those dominating the clinical end picture. For the sake of uniformity, it is advisable to use the terms adopted by the American Committee, namely, atrophic and hypertrophic arthritis, since they convey more accurately the clinical picture of the two types. It is generally agreed that it is impossible to divide all cases in the two groups and that in a considerable number of instances there is overlapping of the two, producing a mixed group. However, for the thorough understanding of the subject and for therapeutic reasons it is advisable to discuss the pathologic processes of the two types of arthritis separately.

Atrophic Arthritis

The early pathologic changes in atrophic arthritis begin with the thickening, round cell infiltration and proliferation of the synovial membrane and the extension from its attachments of a layer of granulation tissue which spreads as pannus over the joint cartilage, covering it more or less completely. The cartilage underneath the granulation tissue sooner or later undergoes destruction and absorption, leaving spongy bone devoid of cartilage but covered by pannus and adhesions. Usually, at the same time there occurs proliferation of connective tissue of the endosteum of the epiphyseal bone marrow. This is accompanied by the formation of numerous new blood vessels and trabeculi, at first osteoid in nature but later becoming true bone, which later may extend into the overlying granulation tissue. The two separate processes may take place simultaneously and thus lead to the destruction of the joint cartilage below. The layers of granulation tissue over the articular surfaces ultimately lead to the formation of adhesions, obliteration of the joint cavity, and fibrous ankylosis. The predominance of endosteal proliferation may lead to bony ankylosis with the possible end result of complete fusion of the bones and the establishment of a continuous marrow cavity between the two. Atrophy of the structures around the joint follows.

Apart from the peripheral ingrowth of pannus, there may be a marked proliferation of the entire synovial membrane of the joint. Through the courtesy of Dr. Damon B. Pfeiffer we have had the opportunity to study a number of synovial membranes and to observe knee joints during synovectomies. The synovial membrane in these cases was markedly enlarged, irregular in outline, thickened, and bluish gray in color. The overlying tissues could be fairly readily separated from the sac. The contents consisted of large amounts of dirty, brownish, slightly viscid fluid in which were suspended numerous "melon seed" and "rice bodies." Some of the larger, flat, whitish, glistening bodies were pedunculated or attached to the synovial membrane by flesh-colored tough bands. The inner lining of the synovial membrane was, for the most part, quite irregular, nodular, and varied in color from grayish brown to dark yellow. The lateral edges of the condyles showed irregular erosions of the articular cartilage and were covered by granulation tissue and adhesions. The articular cartilage between the eroded zones was partly covered by pannus and tough synechial adhesions stretching from the articular surface of the femur to that of the tibia.

Microscopic examination of the synovial membrane revealed marked thickening due to much overgrowth of connective tissue in the outer zone. The inner zone was made up of actively proliferating granulation tissue showing numerous large and small blood spaces, marked round cell infiltration, some "foam" and plasma cells. The inner surface showed no definite lining but here and there a homogeneous necrotic area.

One of Dr. Pfeiffer's patients died 15 months after synovectomy of the knee from lipoid nephrosis. At autopsy, the knee joint showed for the most part smooth glistening articular cartilage. There were, however, some dense adhesions around the central ligament, roughening of the cartilage over a small area, and active destruction of cartilage near the attachments of the synovial membrane. It is of interest to note that the synovial membrane had reformed completely with fairly smooth, glistening inner lining. Microscopically, it showed here and there round cell infiltration and a few small necrotic areas on the surface. The picture in general indicated that the lesions seen in active atrophic arthritis were still active in both the synovial membrane and the articular cartilage.

Hypertrophic Arthritis

Hypertrophic arthritis begins with fibrillation or breaking up of the articular cartilages of the joints. Gradually, the cartilage becomes necrotic, which eventually leads to the denudation and exposure of the underlying bone. As the cartilage on the end of one bone disappears, a compensatory overgrowth of cartilage and bone develops on the opposite articular surface. This leads to a quite irregular or dentate approximation of the joint surfaces. It is only seldom that adhesions form and actual bony ankylosis develops rarely. Some motion of the joint is usually preserved even in cases of long duration. The perichondrium at the periphery of the joint shows increased activity and leads to the formation of cartilage and bone. This produces a thickening and increase in size of the end of a bone. Such a thickening in the fingers is known as Heberden's nodes.

In cases of long standing the exposed bone may become greatly thickened due to overgrowth of trabeculae and the obliteration of marrow spaces. Under friction of use the bone acquires a high degree of billiard ball-like polish termed "eburnation." Eburnation is pathognomonic of hypertrophic arthritis and never occurs in the atrophic variety.

Rarefaction and cyst formation are seen in the shafts of long bones below the joint surfaces. The resulting decrease in rigidity may yield under pressure and lead to changes in the shape of the long bones. The margins of joints in the late stages usually show marked lipping or mushroom-like overgrowth of bone.

ABSTRACT OF DISCUSSION

I. P. P. Hollingsworth (West Chester): As can readily be seen, the management of arthritis is necessarily based on a thorough understanding of the underlying pathology, and the treatment of the disease without this knowledge is difficult.

Nichols and Richardson brought out many years ago the classification of the atrophic and the hypertrophic forms, and as time went on, their description was firmly established. Since then it has been increasingly demonstrated that the pathology is not confined to the joints, but involves many systems of the body, and the joint pathology is only one manifestation of the disease. The co-ordinator of this symposium, Dr. Ralph Pemberton, has been in the forefront of those bringing out this fact. More recently, a third form of arthritis, fibrositis, has been recognized, and the pathologic changes identified. The symptomatology of this form is variable.

The students of comparative pathology, notably Fox, have demonstrated the frequency of the disease in the lower animals. Attempts to correlate altered physiology with the early pathology of arthritis would probably yield important results if further studies were pursued in the lower animals, as this is often not possible early in the disease in the human being. It is frequently difficult to demonstrate any joint changes by x-ray in the early stages, although altered physiology may already exist.

Roentgenographic Aspects of Rheumatoid Diseases

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IN THIS presentation we are concerned with the nonspecific types of arthritis only.

There has been and still is considerable confusion in terminology when attempts are made to classify the types of arthritis of unknown etiology, the very first classification being based on the physical aspects and clinical features of the disease. With the advent of pathology as a medical science, new classifications based on gross and microscopic tissue changes were made, and later, with the introduction of roentgenology, new terms descriptive of the departures from normal seen on the roentgenogram made their appearance and added to the confusion.

Perhaps the most satisfactory classification is that adopted by the American Committee for the Control of Rheumatism. This classification recognizes two main groups—atrophic arthritis and hypertrophic arthritis. We may use as synonyms of the first group—proliferative arthritis and rheumatoid arthritis; and as synonyms of the second group—degenerative arthritis, osteo-arthritis, arthritis deformans, and senile arthritis.

The effects of pathologic changes in a joint are reflected on the roentgenogram by changes in the density of soft tissues and bones. In order to intelligently interpret the roentgen manifestations, one must of necessity have an adequate knowledge of the underlying pathology and be familiar also with the clinical course of any given case.

Atrophic Arthritis

In atrophic arthritis the synovial membrane is the part of the joint primarily involved. This membrane actively proliferates, forming a pannus which gradually spreads over and eventually destroys the articular cartilage. As the disease begins in the hands and feet, it is there where we seek to find the earliest roentgen evidence.

In the very early stages of the disease the roentgen evidence may consist of nothing more than a decrease in the density of the bones, which is first evident at their extremities. Since effusion is among the first reactions of a serous membrane to an irritant, fusiform swelling, which is an indication of the presence of an effusion, must be looked for. This is easily overlooked unless the film is exposed for and shows good soft tissue detail. Fusiform swelling is an important diagnostic point and Ferguson states that in the fingers it is more specific than an increased sedimentation rate as an indication of atrophic arthritis, and is positive fully as often as that test, but not necessarily in the same cases.

As the disease develops there occurs narrowing of the joint space, due to the destruction of the articular cartilage by the continuously spreading pannus and also to granulation tissue which forms in the subchondral bone and invades and destroys the cartilage from below. As the cartilage is destroyed the granulation tissue on one side of the joint forms adhesions with that on the other side and fibrous ankylosis results, with the joints fixed in flexion. Due to the irregular destruction of cartilage and thickening of the soft tissues, subluxations are common in the smaller joints.

Atrophic loss of bone substance is another important roentgen sign, manifested by punched-out areas at the margins of the joints. Gout is manifested by similar defects, but they occur more frequently in atrophic arthritis, although they may not be found in any one given joint. With the continuance of the disease, atrophy becomes more general, the joint space progressively thinner, ossification of fibrous tissue takes place, and eventually the cancellous structure of one bone becomes continuous with that of the other, with complete obliteration of the joint. Before these changes have been completed, the subjective symptoms have for the most part subsided, but there is, of course, permanent deformity and immobility of the involved joints.

Effusion and atrophic loss of bone substance are not characteristic findings in atrophic arthritis of the spine and there is no destruction of the intervertebral disks; but rather the dis-

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ease is characterized by calcifications of the longitudinal ligaments producing the familiar bamboo stick appearance and absolute immobility.

Hypertrophic Arthritis

The earliest pathologic changes in hypertrophic arthritis are found not in the joint capsule but rather in the articular cartilage. Just as its pathology differs from that of atrophic arthritis, in its typical form the clinical features are quite dissimilar, and this is true also, but in a somewhat lesser degree, of its roentgen manifestations.

At the onset there is no atrophy at the ends of the extremities, the earliest characteristic manifestations being the calcifications that occur on the joint margins. These calcifications are known as osteophytes; they develop in the attachment of the joint capsule, ligaments, and tendons and, while in their earliest form they are amorphous, as time goes on they gradually acquire bone structure. In the phalangeal joints where the osteophytes have developed in the attachment of the capsule, they are known as Heberden's nodes and they are responsible for the gnarled appearance of the joints, with which you are all familiar.

As the disease progresses and cartilage continues to be destroyed, narrowing of the joint space occurs. This may be more pronounced on one side than on the other and is due to the rate of destruction not being the same on either side. As the result of this, malalignments and subluxations occur. The continuance of cartilage destruction results finally in the two denuded bone ends being brought into direct contact. This does not, as one would expect, result in bony ankylosis; but rather, because of constant friction, the bone ends become highly polished and eburnated, the eburnation extending into the zone of provisional ossification.

Although hypertrophic arthritis is primarily not a disease of the soft tissues, changes do take place in the joint capsule. The synovial membrane becomes edematous, thickened, and it is thrown into folds or fringes which are called villi. The villi are not demonstrable roentgenographically until they undergo calcification. Whether they are completely detached or remain attached to the synovial membrane by fibrous tissue, they are known as loose bodies. They are distinguished by structural differences from detached osteophytes. Also, they must be differentiated from osteochondritis dissecans and detached fragments in fractures. In osteochondritis the defect from which the fragment was derived is, as a rule, detectable and this is true also in fractures.

The knee and hip joints are frequently affected and they, particularly the latter, show changes on the roentgenogram that are not found in smaller joints. In the hip joint, in the case of long duration, there is demonstrated narrowing of the joint space, some flattening of the femoral head, distortion in the contour of the acetabular shelf, and cyst-like areas of bone destruction in and extending beyond the zone of temporary ossification. On section it has been found that fibrous tissue has replaced bone in the cyst-like areas, or there may be present a serous fluid that has resulted from the breaking down of fibrous tissue.

In the spine, osteophytes sometimes grow to enormous size and completely bridge one vertebra to another. There may be accompanying degeneration of the intervertebral cartilages, narrowing of the intervertebral space, eburnation of the opposing surfaces, and collapse of the bodies. According to Schmorl, this is accomplished in the following manner: As the intervertebral cartilage degenerates, material from the nucleus pulposus of the disk is forced into the cancellous bone causing trabecular destruction, thus allowing opposing surfaces to come into contact, with the eventual result of a glistening and eburnated surface and marginal osteophyte formation.

The roentgen differentiation of atrophic from hypertrophic arthritis in the well-developed case is ordinarily not difficult, the principal characteristics of the former being decalcification, effusion, atrophy of the soft tissue, atrophic loss of bone substance, and bony ankylosis. In hypertrophic arthritis rarely is there effusion or general decalcification, although there may be local atrophy consequent to limited function. The characteristic manifestation is the osteophyte. The osteophytes may cause interference in motion or even, as in the spine, complete immobility by bridging one vertebra with another, but there is never a true bony ankylosis.

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Metabolic Aspects of Rheumatoid Diseases

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Introduction

THE term metabolism in connection with rheumatoid diseases has been restricted generally to a few comparatively uncommon varieties such as gout, hemophilia, menopausal arthralgia, scurvy, and ochronosis. It is generally recognized that the articular manifestations of these syndromes are merely local expressions of comparatively simple abnormalities arising with or from general underlying metabolic conditions. However, the major syndromes of atrophic and hypertrophic arthritis are rarely regarded from the biochemical or metabolic point of view, chiefly because no single chemical factor has been identified as primarily responsible for the entire clinical pattern presented by patients suffering from these conditions.

It would indeed be remarkable if a single metabolic defect could account for syndromes which exhibit the extreme variations of atrophic and hypertrophic arthritis. In these disorders the ebb and flow of symptoms is influenced definitely by age, physiologic activity, and environment. The apparent variety of the factors and agencies which determine the origin and the clinical course of these conditions tends to direct attention away from the evident metabolic aspects of the problem. However, from a physicochemical point of view, certain metabolic disturbances characterize patients with rheumatoid disease, which must be recognized in planning any satisfactory kind of therapeutic regimen for the care of patients with arthritis. The features fall into two general classes: (1) local metabolism of bone and joint tissues; (2) general metabolism of body organs or systems.

Metabolism in the general sense means change. The sum total of the physical and chemical changes in tissues includes the development, maintenance, and disintegration of organs and thus embraces both form and function under ordinary and extraordinary conditions.

There are deviations from the normal metabolism of parts of the body in rheumatoid disease. Certain of these have already been described from the standpoint of the pathologist and roentgenologist. Our present purpose is to describe some of the data regarding the physical and chemical processes constituting metabolism wherein the arthritic differs, either qualitatively or quantitatively, from the normal.

Discussion

In the normal adult the principal structures of the joint, viz., the synovialis, the synovial fluid, and the cartilage, remain essentially fixed in mass, volume, and structural integrity for decades. In the atrophic arthritic, however, these structures present abnormal anabolic and catabolic features.

The synovialis increases in mass in response to undefined agents which stimulate growth. Incidental to this increment in the volume of active tissue, there is an increase in heat production, oxygen consumption, and carbon dioxide production; in short, both an increased anabolism and metabolism with advancing time. In the unarrested atrophic arthritic the proliferating tissue is transformed into a relatively inactive fibrous material with a lowered rate of interchange both of energy and of materials. Coincidentally, with the changes in the synovialis the endothelium of the marrow undergoes a comparable proliferative activity. At the same time the matrix of the bone is changed in composition in such a way that its capacity to bind calcium salts is diminished. Thus, the bone becomes atrophic. During this phase a negative calcium and phosphorus balance must occur. This is followed by a period of relative but nonprogressive demineralization. Classical metabolic studies conducted at this time would provide an inadequate measure of the abnormal state.

Similarly, the synovial fluid, normally maintained at a small volume and with a highly effective lubricating quality, is increased in volume and decreased in lubricating capacity during the active stage of acute inflammation. This differ-

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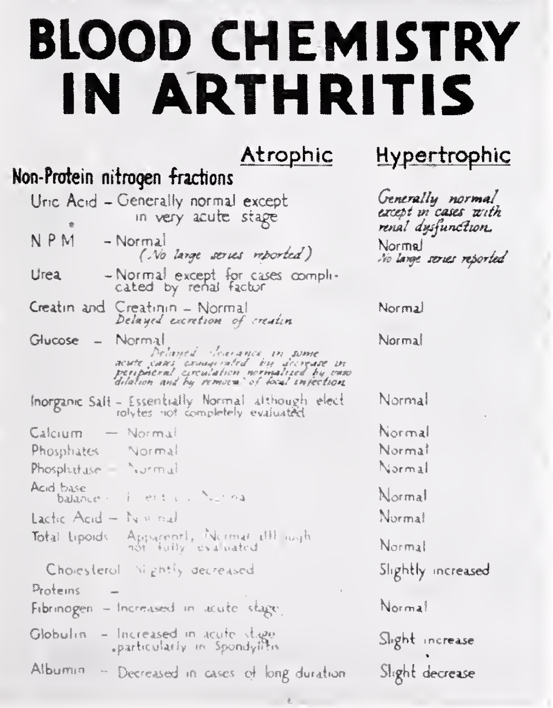
ence in quantity and quality reflects a metabolic alteration in the activities of the synovialis.

In atrophic spondylitis a further evidence of modification of metabolism occurs in the spinal ligaments, the end result of which is an abnormal deposit of lime salts. The intermediary metabolism of the processes, whereby this increased capacity to bind calcium salts develops, is not now known. Despite the fact that direct chemical or physical measurements have not yet provided an index of these several metabolic deviations, their presence should not be overlooked in the appraisal of the metabolic aspects of the atrophic arthritic.

In the hypertrophic arthritic equally important local metabolic changes occur in the tissues of bones and joints. The articular cartilage is reduced in resiliency and mass with the pathologic results already indicated. While unusual conditions of wear and tear of use and trauma may sometimes account for the premature loss of this tissue, other incompletely defined factors such as defects in local nutrition appear to play a rôle. It appears clear that there is a defect in the capacity of cartilaginous cells to anabolize the intercellular or hyaline substance which normally enables this tissue to retain its integrity despite the catabolic influences of friction and strains. Whether as a partial causative factor in this breakdown or as a coincident circumstance, the synovial fluid is decreased in volume and lubricating quality. This decreased lubricating efficiency may be an expression of a lowered concentration of mucin or an imperfectly constructed substance of this kind. The synovialis and periarticular tissues often present evidence of diminished elasticity. The ends of the bones in hypertrophic arthritis often undergo a disintegrative process with a loss of active tissue substance which is replaced by metabolically inactive material.

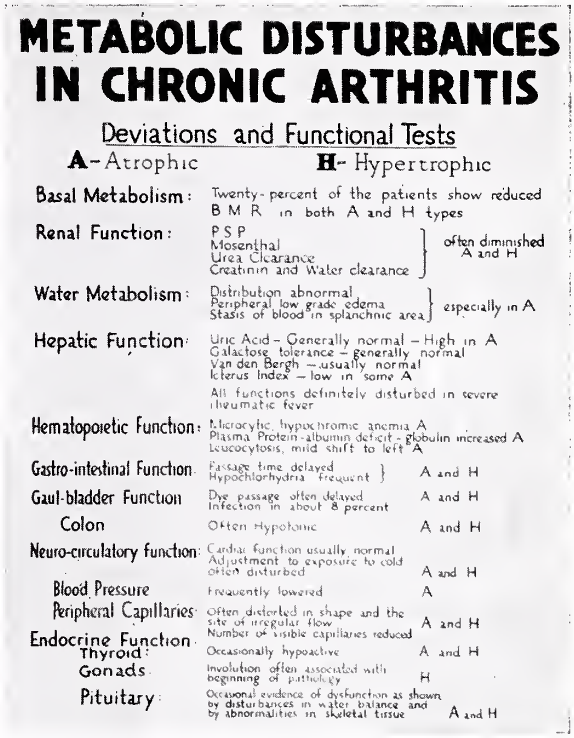
Again, these local metabolic features are not susceptible to routine quantitative chemical measurement. None of the metabolic deviations within these articular tissues are of sufficient magnitude relative to the metabolism of the body as a whole to be reflected in terms of the conventional indices, viz., total basal metabolic rate, nitrogen, calcium or phosphorus balance, nor in the level of these latter substances in the circulating blood. Nevertheless, these local abnormalities in metabolism are so conspicuous and so graphic that they actually provide the basis for the description of the disorders. By the same token, therapeutic measures should exert an influence upon these metabolic deviations and should be applied with regard for the altered functional capacity of these tissues.



BLOOD CHEMISTRY IN ARTHRITIS

	Atrophic	Hypertrophic
Non-Protein nitrogen fractions		
Uric Acid	– Generally normal except in very acute stage	*Generally normal except in cases with renal dysfunction.*
N P M	– Normal *(No large series reported)*	Normal *No large series reported*
Urea	– Normal except for cases complicated by renal factor	
Creatin and	Creatinin – Normal *Delayed excretion of creatin*	Normal
Glucose	– Normal *Delayed clearance in some acute cases exaggerated by decrease in peripheral circulation normalized by vaso dilation and by removal of focal infection*	Normal
Inorganic Salt	– Essentially Normal although electrolytes not completely evaluated	Normal
Calcium	— Normal	Normal
Phosphates	Normal	Normal
Phosphatase	– Normal	Normal
Acid base balance	– [illegible] Normal	Normal
Lactic Acid	– Normal	Normal
Total lipoids	Apparently Normal although not fully evaluated	Normal
Cholesterol	Slightly decreased	Slightly increased
Proteins	–	
Fibrinogen	– Increased in acute stage	Normal
Globulin	– Increased in acute stage particularly in Spondylitis	Slight increase
Albumin	– Decreased in cases of long duration	Slight decrease

Chart 1.



METABOLIC DISTURBANCES IN CHRONIC ARTHRITIS

Deviations and Functional Tests

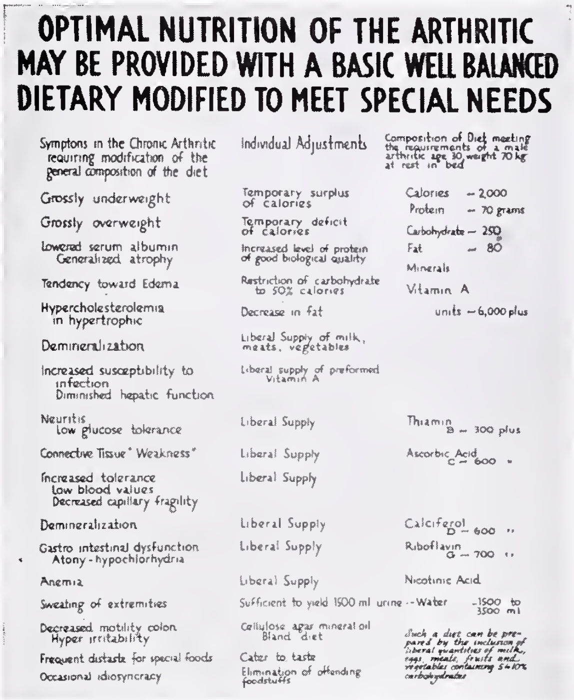
A- Atrophic **H**- Hypertrophic

Basal Metabolism:	Twenty-percent of the patients show reduced B M R in both A and H types	
Renal Function:	P S P Mosenthal Urea Clearance Creatinin and Water clearance	often diminished A and H
Water Metabolism:	Distribution abnormal Peripheral low grade edema Stasis of blood in splanchnic area	especially in A
Hepatic Function:	Uric Acid – Generally normal – High in A Galactose tolerance – generally normal Van den Bergh – usually normal Icterus Index – low in some A All functions definitely disturbed in severe rheumatic fever	
Hematopoietic Function:	Microcytic, hypochromic anemia A Plasma Protein-albumin deficit - globulin increased A Leucocytosis, mild shift to left A	
Gastro-intestinal Function	Passage time delayed Hypochlorhydria frequent	A and H
Gaul-bladder Function	Dye passage often delayed Infection in about 8 percent	A and H
Colon	Often Hypotonic	A and H
Neuro-circulatory function:	Cardiac function usually normal Adjustment to exposure to cold often disturbed	A and H
Blood Pressure	Frequently lowered	A
Peripheral Capillaries:	Often distorted in shape and the site of irregular flow Number of visible capillaries reduced	A and H
Endocrine Function		
Thyroid:	Occasionally hypoactive	A and H
Gonads	Involution often associated with beginning of pathology	H
Pituitary:	Occasional evidence of dysfunction as shown by disturbances in water balance and by abnormalities in skeletal tissue	A and H

Chart 2.

Associated with the local articular disturbances of metabolism there are systemic and extra-articular manifestations which appear with considerable frequency among persons with rheumatoid disease irrespective of the general type. While some of these appear with greater frequency with one variety than with the other, such differences are often of degree rather than of kind. For this reason, as well as for the sake of economy of time, the general metabolic disturbances will be discussed from the standpoint of the deviation from normal rather than as exclusive characteristics of either type alone.

Studies of simple chemical components of the blood such as urea and glucose, which have provided such useful indices of the state of the nephritic and diabetic, have yielded thus far, at least, comparatively little as to the clinical activity of the arthritic. Chart 1 illustrates the paucity of positive data regarding blood chemistry among arthritics. Except for the blood proteins which will be discussed in further detail, the blood of arthritics is essentially normal with respect to the simple solutes usually evaluated in the clinical laboratory. This can be accounted for in part by the fact that organs affecting the levels of most solutes in the blood are not seriously altered in arthritics.



OPTIMAL NUTRITION OF THE ARTHRITIC MAY BE PROVIDED WITH A BASIC WELL BALANCED DIETARY MODIFIED TO MEET SPECIAL NEEDS

Symptons in the Chronic Arthritic requiring modification of the general composition of the diet	Individual Adjustments	Composition of Diet meeting the requirements of a male arthritic age 30 weight 70 kg at rest in bed
Grossly underweight	Temporary surplus of calories	Calories — 2,000 Protein — 70 grams
Grossly overweight	Temporary deficit of calories	Carbohydrate — 250
Lowered serum albumin Generalized atrophy	Increased level of protein of good biological quality	Fat — 80 Minerals
Tendency toward Edema	Restriction of carbohydrate to 50% calories	Vitamin A
Hypercholesterolemia in hypertrophic	Decrease in fat	units — 6,000 plus
Demineralization	Liberal Supply of milk, meats, vegetables	
Increased susceptibility to infection Diminished hepatic function	Liberal supply of preformed Vitamin A	
Neuritis low glucose tolerance	Liberal Supply	Thiamin B — 300 plus
Connective Tissue "Weakness"	Liberal Supply	Ascorbic Acid C — 600 "
Increased tolerance low blood values Decreased capillary fragility	Liberal Supply	
Demineralization	Liberal Supply	Calciferol D — 600 "
Gastro intestinal dysfunction Atony-hypochlorhydria	Liberal Supply	Riboflavin G — 700 "
Anemia	Liberal Supply	Nicotinic Acid
Sweating of extremities	Sufficient to yield 1500 ml urine	--Water —1500 to 3500 ml
Decreased motility colon Hyper irritability	Cellulose agar mineral oil Bland diet	*Such a diet can be prepared by the inclusion of liberal quantities of milk, eggs, meats, fruits and vegetables containing 5+10% carbohydrates*
Frequent distaste for special foods	Cater to taste	
Occasional idiosyncracy	Elimination of offending foodstuffs	

Chart 3.

However, when one turns to the functional studies, it becomes evident that measurable and significant deviations from normal metabolism occur with considerable frequency among patients with rheumatoid diseases. Chart 2 illustrates some of the data showing these relationships. The basal metabolic rate is diminished in about one-third of the patients. Frequently, this is due to wasting rather than to a primary deficit of thyroid, although the latter factor is sometimes of pivotal importance. Renal function is not infrequently depressed, as shown by phenolsulfonphthalein and Mosenthal tests and by urea, creatinine, and water clearances. Studies of water metabolism frequently reveal an abnormal fluid distribution with a peripheral edema. Convalescence is associated by a discharge of this extra tissue fluid. Furthermore, plasma volume studies reveal a stasis of blood fluid in the splanchnic area.

Hepatic function is not seriously depressed in most chronic cases of rheumatoid diseases, but in acute cases all functions of the liver are definitely diminished. Uric acid is generally normal, but tends to be elevated not only in gout but in some atrophic arthritics as well. Some patients with severe atrophic arthritis have a low icterus index, the significance of which is not yet evident. The level of fibrinogen exceeds normal in many atrophics and practically all atrophic spondylitics. The globulin is elevated in atrophics. The albumin is decreased in many patients whose disease is of long standing. These several alterations may be regarded in part as indication of deviations in metabolic activities, centered within the liver. The hematopoietic system is also affected by the disorder as shown by the frequent microcytic hypochromic anemia and by a slight but common leukocytosis with a

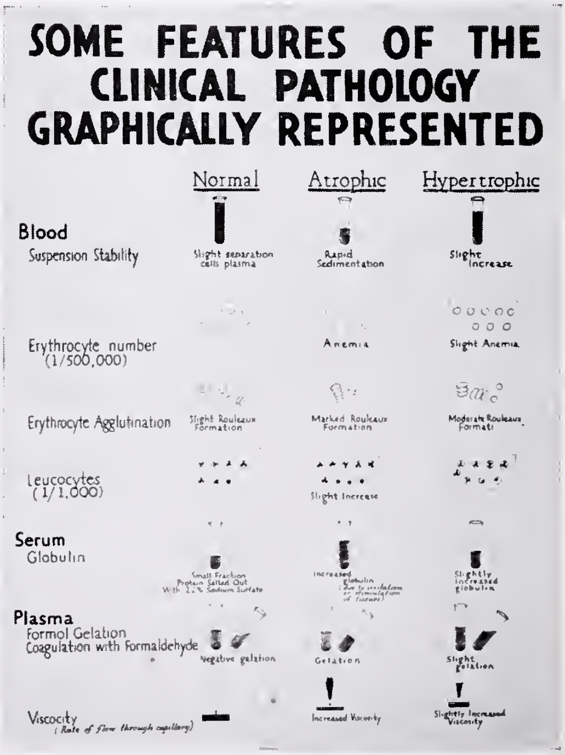

SOME FEATURES OF THE CLINICAL PATHOLOGY GRAPHICALLY REPRESENTED
Normal
Atrophic
Hypertrophic
Blood
Suspension Stability
Slight separation cells plasma
Rapid Sedimentation
Slight Increase
Erythrocyte number (1/500,000)
Anemia
Slight Anemia
Erythrocyte Agglutination
Slight Rouleaux Formation
Marked Rouleaux Formation
Moderate Rouleaux Formati
Leucocytes (1/1,000)
Slight Increase
Serum
Globulin
Small Fraction Protein Salted Out With 22% Sodium Sulfate
Increased globulin
Slightly increased globulin
Plasma
Formol Gelation
Coagulation with Formaldehyde
Negative gelation
Gelation
Slight gelation
Viscocity
(Rate of flow through capillary)
Increased Viscosity
Slightly Increased Viscosity

Chart 4.

mild shift to the left, particularly among the atrophics.

Gastro-intestinal function is variously disturbed, at least a third of the patients showing hypochlorhydria, and a large number suffering from delayed passage time with a hypotonic colon. The gallbladder often shares this atonicity with the remainder of the gastro-intestinal tract.

The neurocirculatory system shows frequent abnormalities despite the fact that cardiac function is infrequently affected. Blood pressure is often lower than normal; adjustment to exposure to cold is generally sluggish. The most conspicuous circulatory disturbances are evident in the cutaneous capillaries which are distorted in shape and are the site of irregular flow. While not subjected to a quantitative objective measure, the metabolism of the central nervous system is clinically notable. A sense of ready fatigue and unrest bordering on neurasthenia is a common and generally conspicuous feature of the ill arthritic.

Disturbances of endocrine balance and function are not uncommonly observed among subjects of rheumatoid disease. As noted before, a small number of the patients with rheumatoid disease having decreased basal metabolic rates have real hypofunction of the thyroid, and in them rheumatoid complaints are corrected by thyroid therapy. It is also notable that among patients presenting menopausal symptoms 50 per cent suffer from rheumatoid complaints. Hypertrophic arthritis occurs chiefly at the age when gonadal involution occurs. The subjective symptomatology frequently varies periodically in women, suggestive of some relationship, though perhaps not specific, to the menstrual cycle. This may be secondary to the water shifts already referred to. Pregnancy intervening in the course of an atrophic arthritis is sometimes associated with an arrest of the clinical activity of the arthritis. The disturbances in water metabolism and skeletal deviations are conceivably referable to dysfunction of the posterior and anterior portions of the pituitary respectively. These several clinical associations strongly suggest that endocrinous factors play an important rôle in the pathogenesis of at least some of the symptoms presented by arthritics during the clinical course of their illness.

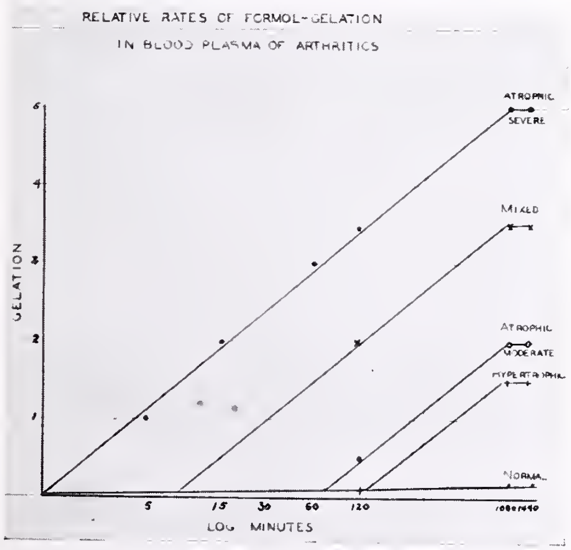


Chart 5.

Turning now to the metabolism of foodstuffs and the evidences of deviations from the normal presented by patients with arthritis, Chart 3 illustrates in outline the general nature of the data indicative of modified requirements for specific metabolites indicated by symptoms presented by the arthritic.

Gross overweight is not uncommon among hypertrophics and underweight is often conspicuous among atrophics. These states reflect metabolic imbalances with respect to energy balance of considerable importance to the arthritic. Both underweight and overweight aggravate, if they do not play a more direct rôle in the articular and systemic disturbances constituting these syndromes. The lowered serum albumin together with the generalized atrophy of the atrophic suggests either actual losses or an increased demand for essential amino-acids. The tendency toward edema indicates not only an abnormal retention of fluid but carries the further implication that the intake of solutes tending to hold water should be diminished, viz., carbohydrate and sodium chloride. The hypercholesterolemia of the hypertrophic is not sufficiently frequent nor marked in degree to require restriction in fats. The demineralization of the skeleton and decreased integrity of the connective tissue skeleton is evidence of metabolic defect possibly influenced by deficits or increased requirements for vitamins C and D. Atrophics, particularly spondylitics, do show a diminished blood level together with an increased tolerance for ascorbic acid. Relatively large doses of vitamin C are required by these patients in order to reach a saturation level in the circulation and exceed the renal threshold. The diminished capacity of the arthritic with hepatic dysfunction to produce vitamin A from carotene increases his requirements for the preformed vitamin A. The occasional low glucose tolerance, neuritis, and anorexia are suggestive of a metabolic need for extra supplies of vitamin B. The gastro-intestinal dysfunction, anemia, and decreased peripheral blood flow may in some instances reflect a demand for nicotinic acid.

Finally, attention may be directed briefly to a few technical procedures recently applied to the study of the fluids of arthritics which provide indices of various systemic deviations from normal metabolism.

The well-known and widely used sedimentation rate is one of the more fruitful and practical objective measures of clinical severity. Somewhat more complicated technically, but more revealing as to the nature of metabolic deviations underlying the change in physical qualities of the blood, is the fractionation of the plasma proteins. The marked increments of fibrinogen and globulin above normal in the blood of severely active atrophics are indicative of the presence and influence of foreign agents upon the bodily defense activities or antibody production. Closely paralleling the sedimentation rate both in significance and simplicity is the formol-gel reaction which depends upon the gelation production in plasma by mixture with formalin. Plasmas of blood showing diminished suspension stability generally show positive formol-gelation. Somewhat similar in origin, but carrying further implication as far as metabolic interpretation is concerned, is the increase in relative viscosity of the bloods of active arthritics. This coupled with the tendency of cells to separate from the plasma means that the arthritic must do more metabolic work than the normal merely to maintain the circulatory efficiency equivalent to that of the normal.

The formol-gelation of atrophics is more rapid and more marked in severe atrophics than in moderate or hypertrophics. Regardless of the clinical type, the sedimentation rate parallels the formol-gelation.

A preliminary study conducted in our laboratory on the films formed on the surface of water by blood plasma and serum of arthritics suggests that the fluids of severely ill arthritics differ from normals and from less active arthritics. The surface films formed from equivalent volumes of plasma are less in area for arthritics than for the controls. While the determination is not at present applicable as a routine procedure nor as a specific test for rheumatoid disease, it does disclose an additional physical index of a metabolic deviation in the arthritic subject. The diminished capacity of the plasma of arthritic blood to form a film at an interface is not only evidence of a lowered concentration of film-forming "stuff" but further evidence of a lessened efficiency of the blood to perform those physiologic functions depending upon this quality.

In recalling attention to the several local and general metabolic disturbances presented by the patient with so-called rheumatoid disease, no pretense is made that these itemized deviations constitute all the metabolic aspects of rheumatoid disease. There are undoubtedly other equally important if not more significant deviations of metabolism in the arthritic. It is further conceivable that arthritics may present all of these several deviations as a result of a primary disturbance not indicated by the multiplicity apparent in this catalogue. Until, however, a satisfactory unifying expression of these conditions can be developed which embraces all of these disturbances, it is necessary to regard them as integral parts of the clinical problem presented by the patient.

If one grants concessions to the possibility that all deviations from normal metabolism are important, beginning with local articular and including general systemic, doubt may arise on the basis of purely practical considerations. It may be observed that after all many, if not most, of the systemic deviations from normal metabolism presented by the arthritic are not "specific" or distinctive but are indeed shared by patients with other kinds of chronic diseases. Why not, then, omit consideration of all symptomatic features shared by persons with chronic disorders not characterized by articular complaints and consider the features peculiar to the arthritics? The articular tissues, however, live within a complex biologic environment. Only in a tissue culture flask can they be isolated and in such a place they are not capable of expressing their full capacities. It is because of par-

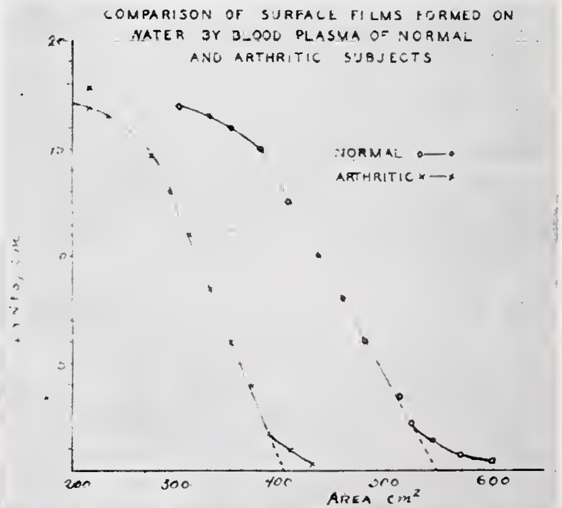


Chart 6.

ticipation of these tissues in the activities of the entire organism that they develop and disintegrate as they do.

Disorder or disease in a tissue is no longer regarded as due to a solitary "visitation of an evil spirit" which can be "chased out" by guesswork or pseudoscientific therapy. It is a result of changes induced in the economy by disintegrative processes from without and within. By the same token, the time has long since passed when the physician's task is finished by giving a partial and superficially descriptive name to a clinical condition and then prescribing an equally partial and superficially effective procedure or drugs for the patient. Any name for a clinical syndrome must be recognized as a shorthand expression or symbol of a general pattern. The cataloguing of persons with rheumatism or arthritis under a label defining deviations of metabolism of one tissue alone is inadequate if, by the application of these names, other coincident deviations from normal metabolism in other tissues are discarded as irrelevant.

Summary

Patients with rheumatoid disorders present frequent evidence of deviations from normal metabolism, not only in the tissues of bones and joints but also in the various systems and organs of the body. No single kind of metabolic disturbance characterizes all arthritics, even of any single clinical class. The metabolic abnormalities differ in degree rather than in kind in the two main clinical types, atrophic and hypertrophic. Recognition of these features is prerequisite to adequate care of the patient with rheumatoid disease. The articular tissue changes are most practically defined by pathologic, clinicopathologic, and roentgenologic study of the joint structure, cartilage, synovialis, and synovial fluid. Deviations are revealed in the circulatory, gastro-intestinal, nervous, muscular, and skeletal tissues by functional and physiologic studies. Routine biochemical analyses of blood and urine when taken alone are comparatively inadequate as sources of significant data. Small but important deviations are apparent in the way in which protein, carbohydrate, and water are handled by many arthritics. Nutritional and endocrinous factors together with physical influences appear to play conspicuous rôles in the determination of the arthritic syndrome. Optimal prescription for the patient suffering from rheumatoid disease requires recognition of and then adjustment of the several deviations toward normal.

DO YOU WORRY?

When things go wrong, do you stew and sit and bite your nails? If you do, reflect back on your life that most of the troubles you anticipated and worried over *never came*. Troubles are always waiting for you just around the corner, where they usually emerge *after* you have passed.

Uncomfortable situations have to be met by all of us —and overcome. If we are weak, as most of us are at some time or another, we brood and worry until a little cloud becomes as black as thunder. The major part of our troubles exists in our imaginations. They block the uncertainty ahead and tower like mountains. The man of action takes little notice of their threatening appearance, for he finds himself ahead of them before he has had time to realize that they are there.

Thinking is not worrying. If followed by positive action, thinking will circumvent any bad situation. Worrying is imagination running riot on the possibilities of disaster. Its most hard-worked word is "if." "If so and so happens, I shall be ruined." There you have the basis of most worries—and the "if" seldom materializes. Worrying only tends to make a bad thing worse, for you deprive yourself of the weapons which assist you to overcome your mishaps.

Troubles are overcome by calm and collected thought. The man who can make light of them, without discounting their seriousness, is a happy man indeed. He is capable of going through all that life may bring to him and finding good in it all. Scientists will tell you that worry is bad for certain tissues, but that will not help you when you feel inclined to give way. All the same, it is well to know that worry produces a change in your physical make-up, depriving you of some of the power to make good in a difficult situation.

The way to meet a troublesome matter is to calmly consider the best ways by which you can regain your former happiness state. It may be that your worry is not your own—a loved one is in distress or ill. Time now to decide that you will, with all your might, make that loved one feel that he or she is nearer the best than the worst. Give them hope; bring whatever joy you can into their lives when they are most in need of it. If you add a worried face to their troubles, you are doing no good to yourself. You are, in fact, a very decided measure of harm to them—and the last thing you desire.

Were it of any benefit, worry would have been very excusable these past lean years. Have you seen anyone who has gone through the mill any the better for having worried over it? The fellow who smiled his way through the difficult period is enjoying the good that is now coming to him. The man who worried is too unhappy to find any good in anything at any time. Once you worry over one misfortune, you will worry over them all, whether the worries are real or imaginary. No, it doesn't pay to worry any time.—*The York Trade Compositor.*

Many arthritis "prospects" may one day bless the physicians who have studiously read the Symposium on Rheumatoid Arthritis, page 1317.

Experimental Etiology of Arthritis

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ARTHRITIS is not a single disease entity; it includes many conditions clinically similar, but of varied etiology, e.g., gout, neurotrophic joint disturbances, tuberculosis, atrophic and hypertrophic arthritis. In some of these the etiology is more or less obvious, while in others it remains definitely unknown. It is the group of unknowns—atrophic and hypertrophic arthritis—which will receive most of our attention, for it is this group which presents one of the greatest problems the clinician is called upon to work out, and at the same time represents a challenge to the laboratory investigator.

Bacterial Infection

In the minds of a great many, bacterial infection, especially by some form of the streptococcus, has long been intimately associated with the etiology of arthritis. Joint changes, resembling those found in arthritis, have been produced by a great many different investigators. Cecil,[1] for instance, accomplished this by injecting not only hemolytic streptococci directly into the blood stream of rabbits but also by the injection of Staphylococcus aureus and the pneumococcus. It seemed to make little difference in the end result as to which organism was used, or from whence the organism was obtained, for streptococci from infected teeth of an arthritic were no better in producing arthritis than streptococci from a case of erysipelas. Similar results were obtained also when a focus of infection was established by the injection of hemolytic streptococci into various parts of rabbits other than the blood stream, as the gums, gallbladder, genito-urinary system, etc. It is significant in this series that nearly all the rabbits that developed arthritis had a transitory bacteremia, so that actually this is essentially the same as injecting them into the blood stream in the first place.

Not only bacteria but other substances as well have produced arthritis when injected into the joints of experimental animals—turpentine,[7] indole,[10] ordinary salt solution, and many other agents. These substances produce a reaction in the joints, which in the end result is practically the same as that produced by the intravenous injection of bacteria.

Pleuropneumonia-like Organisms

Filtrable viruses have attained considerable prominence in the past few years in the investigation of a great variety of disease conditions. Arthritis has come in for its share.

Sabin[2] isolated a filtrable micro-organism from the brain of a normal mouse, which, when injected intravenously or intraperitoneally, produced a migratory arthritis comparable clinically to human arthritis. The organism was apparently localized in joints only, for the disease could be produced in other mice by injection of joint suspensions, but not from suspensions of any of the viscera.

Collier[4] and Findlay,[3] working independently, had much the same experience with a pleuropneumonia-like organism from spontaneous arthritis among laboratory rats. The disease was transmitted by injecting ground suspensions of diseased joints into the foot pads of other rats. In this instance, however, the organism apparently was not localized in joint tissue alone, because the disease could be transmitted by injection of blood, pleural exudate, and suspension of lungs, although this material was sterile for all ordinary bacteria.

Although apparently arthritis could be produced almost at will by injection of material from diseased animals, in no case was it transmitted to uninjected rats or mice kept in the same cage. But the animals which recovered from the disease apparently had acquired a fairly strong immunity, for it was difficult to give them a second attack, despite the fact that, with frequent passage, the organism increased in virulence, so that it was possible to produce the disease with progressively smaller doses of ma-

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From the Department of Rheumatoid Disease of the Abington Memorial Hospital, Abington, Pa.

terial. Also, a definite species specificity was exhibited, because it was impossible to transmit arthritis from mice to rats or rabbits, or from rats to mice, rabbits, guinea pigs, hedgehogs, or monkeys.

An attempt[5] has been made to produce arthritis in monkeys by injection of virus-like bodies isolated from exudates of patients with active atrophic arthritis, but no lesions were produced. Neither were any results obtained from an attempt to produce the disease in rats and mice by the injection of material from human arthritic joints.

This work is extremely interesting and somewhat promising, for arthritis produced in animals by virus-like organisms appears to be clinically more like human arthritis than that produced by ordinary bacteria or by chemical irritants. Comparatively little is known about the viruses, but unless something can be done about the species specificity they apparently exhibit, experimental work on human arthritis is going to be greatly handicapped.

Bacterial Allergy

The theory of bacterial allergy is, in our present state of knowledge, highly hypothetic and very involved. No one seems to have a clear understanding of what it is or, as a matter of fact, whether such a condition actually exists.

Vitamin C Deficiency

Rinehart[6] studied the metabolism of vitamin C by measuring plasm levels in 120 normal controls and 80 arthritics. He showed that patients with atrophic and gonorrheal arthritis had plasm levels significantly below the normal, while those with hypertrophic arthritis had levels significantly above the normals. Feeding of 100 mg. of cevitamic acid as a supplement to their ordinary diet raised the level of the atrophics to nearly normal. But the rate of excretion of cevitamic acid also was increased in the arthritics fed vitamin C, so that they apparently had a defect in the metabolism of that vitamin or a lowered renal threshold. Speculating on his result, Rinehart said, "Perhaps arthritis develops because of lowered resistance of articular tissue to bacterial localization secondary to mild or moderate vitamin C deficiency." But it has been shown that a tendency to hypovitaminosis is present in other conditions—tuberculosis, pneumonia, typhoid fever, furunculosis, etc. Baer in his discussion of Rinehart's paper reports 35 patients with acute pharyngitis with definitely reduced vitamin C plasma levels, though none of them developed arthritis.

It would appear then that vitamin C deficiency, as measured by plasma levels, exists in a great variety of conditions and is probably the result rather than the cause of the disease.

Endocrine Theory

Silberberg[8] reported rather extensive experiments in which he injected anterior pituitary extract from cattle into young guinea pigs in an attempt to produce changes in the joint structures. He was able to demonstrate, in a fairly high percentage, hypertrophy and hyperplasia of cartilage cells at the transitional zone, proceeding upward to the weight-bearing surface and resulting in ulceration of cells on the surface. In some cases this was followed by calcification.

These changes were produced in young pigs before epiphyseal lines were closed, and suggest that the growth factor of the anterior pituitary not only governs growth but, in excess, may have something to do with pathologic changes in cartilage cells. The experiment was repeated at Abington, but no cartilage changes could be identified.

No other experimental reports, published during the past few years, have been found which seem to add any weight to the theory that endocrine disorders are capable of producing arthritis. The clinical application of this phase of the problem will be discussed elsewhere.

Circulatory Changes

Changes in the patella of dogs, comparable to those seen in hypertrophic arthritis, have been produced by ligating the blood supply to that bone.[9] It was noted that less change resulted in young animals, thus lending support to the theory that hypertrophic arthritis represents the response of more adult tissue to trauma.

Conclusion

Joint changes, similar to those found in arthritis, have been produced in experimental animals in a great variety of ways—by bacteria, injected either locally or intravenously, virus-like organisms, turpentine, salt, interfering with the normal blood supply, repeated trauma, etc. It seems logical to conclude, therefore, that the joint manifestations of arthritis, represent simply the reaction of joint tissues to an irritant, and that the reaction is not dependent so much upon the character of the irritant as it is upon some quality inherent in the joint itself. And further, this reaction, once started, is capable of progressing under its own momentum after the agent which started it has disappeared from view.

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Clinical Aspects of the Etiology of Chronic Arthritis

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CHRONIC arthritis, as Dr. Westcott has emphasized in his contribution to this symposium, is a general, systemic disease for which no single causative organism has been proved "specific" thus far. Perhaps no single specific etiologic agent will ever be discovered because the known etiologic factors are so numerous, complex, and varied.

Undoubtedly, heredity, body build, and constitutional make-up tend to predispose certain individuals to develop arthritis. Although arthritis is not a hereditary disease in the strict sense of that word, arthritic patients frequently have a brother, sister, parent, grandparent, uncle, or aunt who has suffered from some rheumatoid disorder. A familial history is elicited in over 50 per cent of all arthritics, but is especially obvious in atrophic arthritis.

This hereditary predisposition depends upon anatomic make-up or anthropometric characteristics, with the inheritance of vulnerable cartilage, unstable nervous, vascular, and gastro-intestinal systems, and perhaps, immunologic reactions which predispose to attacks by arthritis. Thus, atrophic arthritis is more common in the slender, underweight, flat-chested, round-shouldered, visceroptotic type of person with a narrow epigastric angle, lumbar lordosis, and a prominent abdomen. Atrophic arthritics are often poor physical specimens who complain of cold hands and feet and vasomotor disturbances long before any arthritis develops. Although atrophic arthritis usually occurs in thin, asthenic individuals, it may attack the sthenic, thick-necked, barrel-chested, robust, well-nourished, stocky type, which is more susceptible to hypertrophic arthritis.

Upon this soil arthritis may develop when certain precipitating factors appear, especially overwork, mental and physical fatigue, nervous shock, emotional strain, gastro-intestinal dysfunction, inadequate or unbalanced diet, infection, trauma, faulty body mechanics, endocrine dysfunction, exposure to cold and dampness, and perhaps, allergic phenomena.

Arthritic patients often lack physical stamina and suffer earlier and more severely from fatigue and the wear and tear of life. They have congenitally poor nervous systems. J. K. Mitchell, and later, Sir William Osler, stressed the etiologic rôle of worry, grief, and nervous shock, such as a sudden death in the family or too frequently repeated pregnancies. Poverty, hardship, poor home environment, and poor hygiene are often determining factors in the onset of arthritis. J. L. Halliday believes that emotional reactions may cause arthritis and that certain symptoms have symbolic, psychologic connotations.

Vasomotor disturbance of the peripheral vascular system is evidenced, especially in atrophic arthritics, by increased sweating and cold, clammy hands and feet. The electric thermocouple shows a decreased surface temperature of the skin. Direct observation of the capillaries at the base of the fingernails of atrophic

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Read before the Section on Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 3, 1940.

arthritics shows an impaired capillary circulation with narrowed capillaries, intermittent and slowed capillary flow, and capillary stasis. Furthermore, symptomatic improvement follows vasodilating therapeutic procedures.

Faulty gastro-intestinal function occurs frequently in both types of arthritis. Intestinal absorption, especially of vitamins, iron, etc., is often impaired. A secondary anemia is very commonly found in the atrophic type. Most arthritics have sluggish bowels. The elongation, tortuosity, atony, dilatation, and ptosis of the colon of many arthritics cause intestinal stasis. Hypochlorhydria and gastroptosis are often encountered.

An inadequate, excessive, or unbalanced diet may result in water retention in the tissues, as shown by Dr. C. Wesler Scull, or in a deficiency of vitamins, especially, B, C, and D, or in obesity. Furthermore, a diet optimal for a normal person may be inadequate for the arthritic with impaired intestinal absorption. The body requires a minimal quota of thiamin and riboflavin to supply the enzymes essential for carbohydrate metabolism. If the carbohydrate intake exceeds an optimal level, the quota of vitamin is drawn upon, leaving less for other requirements.

One of the most common precipitating factors, certainly in atrophic arthritis, is infection, especially after the previously mentioned elements have paved the way. Acute infections, such as tonsillitis, coryza, grippe, influenza, or furunculosis often immediately precede the onset of arthritis. Chronic infections of the teeth, gums, tonsils, sinuses, middle ear, prostate, seminal vesicles, cervix uteri, fallopian tubes, gallbladder, colon, appendix, urinary bladder, renal pelvis, and the bronchi are especially important. These foci of infection are extremely common, especially in the teeth and tonsils. One might say "Uneasy lies the tooth that wears a crown." However, the problem of focal infection forms the title of the next paper in this symposium, and I shall say no more about it.

Atrophic arthritis superficially resembles a chronic infectious disease. Some form of streptococcus is suspected of being the organism involved. While streptococci have been recovered from the blood stream, joints, foci of infection, and lymph nodes of atrophic arthritics, the percentage of positive results varies greatly with different workers. Specific agglutinins and precipitins for Streptococcus hemolyticus are present in the blood of a high percentage of patients with atrophic arthritis, and are absent in hypertrophic arthritis. Leukocytosis and the elevation of the sedimentation rate of erythrocytes in atrophic arthritis also point to the conclusion that infectious processes are operative in atrophic arthritis, whereas the levels are normal or only very slightly increased in hypertrophic arthritis. Positive skin reactions to hemolytic streptococci are shown in 75 per cent of all atrophic arthritics. Bacterial allergy may play a hypothetic rôle in producing joint symptoms in atrophic arthritis. There is little or no direct or indirect evidence of infection in hypertrophic arthritis.

Citing actual cases may emphasize the factors that make the soil fertile for infection. I recall a patient who worked many long hours under nervous strain, for years, to achieve the goal of his ambition. At last, worn out physically, but too proud to give in, he whipped up all of his reserve energy to attain his goal despite the handicap of fatigue. But he developed arthritis before success could crown his efforts. Another patient might never have become arthritic if she had taken the adequate rest she needed so badly, and if she had obtained the proper care during her slow convalescence after a severe attack of influenza. I recall also a college student whose arthritis became manifest the day after she received the shocking news of the sudden death of her father in an automobile accident. And, finally, there was a young lawyer, a brilliant scholar, who worked his way through college and law school and who, for years before he developed his arthritis, lived on a diet very strikingly deficient in proteins and vitamins and high in starches. Thus, the way is paved for the development of atrophic arthritis by physical and nervous strain, causing excessive fatigue, by debility from worry and overwork, by attacks of disease which exhaust the energy reserves, and by poor nutrition. R. B. Osgood warns that "a thin, ptotic, constipated, asthenic 20 to 30-year-old member of a family with a tendency to rheumatism, who burns either the mental or physical candle at both ends, may well be warned that atrophic arthritis is very likely in the offing."

Trauma is another precipitating factor. A sprained ankle, a fracture, or a wound which involves a joint may lower local resistance and determine the primary site of arthritic involvement. In a predisposed individual the joints most often exposed to trauma develop the earliest lesions and the disease progresses most rapidly in these joints. The strain and trauma of occupation favor the onset of hypertrophic arthritis. Acute trauma, such as baseball finger, and chronic trauma, such as seamstresses, stenographers, and pianists expose their fingers to, predisposes to the early development of Heberden's nodes of the terminal interphalangeal joints. Faulty body mechanics from bad posture, flat feet, etc., may cause constant remote trauma. Adiposity favors the onset of degenerative diseases and induces joint trauma. The joints which bear the brunt of the overweight—the feet, knees, and spine—are the most hard hit in the obese.

While hypertrophic arthritis shows no striking difference in sex incidence, 2 or 3 female patients develop atrophic arthritis for every male patient. About 80 per cent of atrophic arthritis begins between the ages of 20 and 50, with the peak at 35. Hypertrophic arthritis is rarely recognized before the age of 40, unless after trauma, as in the case of baseball pitcher's elbow. Age is a predisposing factor in the degenerative changes of hypertrophic arthritis, which some rheumatologists call senescent arthritis. But the aging process, the wear and tear of living, is no more important etiologically than trauma, obesity, and the other factors already discussed.

Although the basal metabolism is reduced in at least 20 per cent of all cases, arthritics are not myxedematous. Women at the menopause seem to be more susceptible, especially to hypertrophic arthritis, but there is no specific climacteric arthritis. Indeed, there is no proof that endocrine disturbance alone ever produces arthritis.

Atrophic arthritis is a disease of the temperate climate. Its incidence decreases as the equator and the poles are approached. Indeed, Clark found almost no cases in the tropics. Hypertrophic arthritis occurs universally. The incidence of the atrophic type is greater in chilly, damp climates than in warm, dry regions. This is not true of the hypertrophic type. Environmental changes and variations of temperature, moisture, and barometric pressure influence healthy people and have a marked effect upon arthritics. Dr. Ralph Pemberton noted during World War I that the precipitating factor in 58 per cent of 400 cases in the army was "exposure to cold or wet or both."

Since not one but many factors are operative in causing chronic arthritis, every arthritic requires careful consideration of the patient as a whole. Every patient is a separate, distinct entity. A careful history and thorough physical and laboratory examination are essential to determine what etiologic factors are operative in any given case. Otherwise, both physician and patient will sail an uncharted sea.

EXAMINATIONS IN MEDICAL AND NURSING FIELDS ANNOUNCED BY U. S. CIVIL SERVICE COMMISSION

As a part of the national defense program, nurses for hospitals and public health nursing, medical technicians, and laboratory workers are needed by various government agencies. To fill these needs, the Civil Service Commission has just announced 2 new examinations in the medical and nursing fields, as well as a revised type of examination for junior graduate nurse positions.

Public health nursing consultant positions, paying $2600 and $3200 a year, are open in the U. S. Public Health Service of the Federal Security Agency. Nursing consultants will advise and consult with state health administrators as to the organization and administration of public health nursing within the respective states. They will also assist public health nursing directors in planning staff education programs and in demonstrating the conduct of institutes for groups of nurses on such subjects as health teaching, tuberculosis nursing, and child hygiene. This examination is open only to registered graduate nurses who have completed a 4-year college course, including or supplemented by at least one year of study in public health nursing, and who have had experience in public health nursing supervision. Applications will not be accepted after July 26, 1941.

Applications will be accepted until further notice for positions as medical technician paying from $1620 to $2000 a year and as junior laboratory helper at $1440 a year. For senior medical technician and junior laboratory helper there are 2 optional subjects in which persons may qualify—general, and roentgenology. Persons applying for the full or assistant grade of medical technician may qualify also in surgery. Applicants must have had at least 14 units of high school study; otherwise they must pass a written general test. Appropriate laboratory, clinical, or operating room experience is required. Completion of a 4-year college course with major study in biology, chemistry, physics, or medical technology may be substituted for part of the experience.

To meet the pressing need for nurses in the Veterans' Administration, Public Health Service, and Indian Field Service, the commission has just reannounced the examination for Junior Graduate Nurse at $1620 a year. Applicants will no longer be required to take a written test and the vision requirement has been modified. Applications will be rated as received until further notice.

Persons who are interested in and qualified for any of these positions are urged to send their applications to the commission's Washington office. Further information and application forms may be obtained at any first-class or second-class post office or from the commission.

Focal Infection in Rheumatoid Disease

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FOCAL infections command an important position in a discussion of the etiology and treatment of arthritis. Focal infection may be the chief etiologic factor in the rheumatoid syndrome, it may be of secondary importance, or it may have no relationship. Its importance in the etiology of a given case is determined by one's familiarity with the rheumatoid problem through clinical experience in the handling of arthritic patients, and critical evaluation of the analyses of experienced collaborators in the specialties concerned. No contributing handicaps important enough to keep the ill arthritic in a state of imbalance and prevent his recovery should be disregarded. Searching out foci of infection, with subsequent treatment or removal, is a therapeutic measure of recognized importance in the Arthritic Clinic at the Abington Memorial Hospital. The removal of foci, however, should not be attempted until an "equilibrium" has been established by means of rest in bed and other important therapeutic measures.

Twenty-eight years ago Billings emphasized the rôle of focal infection in the production of disease. Infected tonsils were found to be the focus of infection in each of the 10 cases of arthritis and 6 cases of nephritis reported by Billings, and recovery resulted following their removal. He stressed the treatment or removal of focal lesions and the need of general hygienic treatment for all classes of patients harboring focal infection. These general measures were found to play an important rôle in the favorable outcome of the systemic disease. If focal infection is present, Billings suggested that it may produce acute disease or chronic degenerative changes in any organ of the body and therefore should be radically eliminated.

Bierring in his review of "Focal Infection: Quarter Century Survey" expressed the need for a conservative attitude. He disapproved of hasty diagnostic conclusions and radical removal of suspected foci of infection and concluded that "It is the patient with focal infection who requires treatment and not the focal infection alone."

Some clinicians regard focal infection as unimportant. This conclusion is based upon the fact that recovery from systemic manifestations does not necessarily follow the eradication of foci. They assume that such failures negate the whole principle, and apply this negativistic attitude to the problem of hypertrophic arthritis, regarding it as degenerative and therefore unrelated to infection. Furthermore, they regard atrophic arthritis as inaccessible to any influence. Rheumatologists familiar with the problem consider the removal of foci one link in the chain of therapy. All links are important. Seldom does the removal of a single focus alone arrest the activity of the disease. Treatment of arthritis begins but does not end with the proper care and conservative removal of foci.

The following viewpoints are expressed by clinicians interested over a period of years in the arthritic syndrome and reflect mature judgment regarding the care of focal infections:

Minot: "The early removal of foci is indicated, but the patient should be built up before undertaking debilitating surgical procedures."

Haden: "Focal infection is only an influencing factor, not the one of chief importance. Nevertheless, it is unwise to allow evident focal infections to remain. They should be removed early in mild cases; in more advanced cases, when patients are on the upgrade."

Table I is presented to show the incidence of foci of infection which had been removed or treated in a group of private, dispensary, and ward patients before critical study. The arthritis was still active in these patients:

TABLE I

	255 Atrophic	*203 Hypertrophic*	*47 Mixed*
Dental extractions	62	10	13
Treatment of gingivitis	1	0	0
Tonsillectomy	106	53	15
Prostatic massage	9	6	0
Sinus operations	6	3	2
Gallbladder drainages .	6	5	1
Cholecystectomies	5	0	0

Read before the Section on Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 3, 1940.

Oral Cavity

The oral cavity presents the most frequent site of infection. In a review of this region the apical as well as the gingival structures should be investigated. When infection is present in these sites, it may easily be carried to other parts of the body because of the unusually rich blood and lymphatic supply. Gingivitis is often an important source of infection in arthritis, as yet unappreciated by the profession as a whole. It is best controlled by a program designed to improve the general health of the individual, as well as by local measures directed to the involved gingiva.

A careful dental survey is important to determine pathology associated with pulpless teeth, questionable teeth, retained roots, erupted and unerupted third molars, alveolar infection, cysts, questionable crowns and bridges. The retention of any focus of infection in the mouth in an ill arthritic may not only lower his general resistance further and cause a focal infection elsewhere in the body, as in the prostate, but may prevent the occurrence of expected clinical results.

The elimination of dental infection in early cases of atrophic arthritis may dramatically arrest the disease. The removal of infection associated with teeth should be cared for in advanced cases of arthritis, in that it usually improves the patient's general health, though it may have little effect on the already damaged joints. Suggestive evidence of a relationship between dental infection and arthritis is to be seen occasionally in a flare-up or temporary exacerbation of pain following the treatment of gingivitis or the extraction of a tooth. This reaction may be explained according to Okell and Elliott by the temporary occurrence of a shower of organisms in the blood stream following trauma incidental to the treatment of the infected gingiva or the removal of an infected tooth, though other explanations can also be advanced.

Table II

200 Cases Divided as Follows:	*99 Atrophic*	*77 Hypertrophic*	*24 Mixed*
Infected teeth extracted before study	36	19	14
Infected teeth revealed by study	40	52	15
Infected retained roots revealed by same study	18	5	2
Gingival infection treated before study	0	0	0
Gingival infection revealed by study:	75	57	19
Type 1	4	7	0
Type 2	46	29	7
Type 3	22	18	12
Type 4	3	3	0

Table II gives a résumé of 200 patients taken from a group of 505 patients studied with Dr. Pemberton and indicates the pathology in the mouth which was removed prior to critical study and also the marked amount of residual infection, in the presence of which it would be almost futile to expect complete recovery.

Nose and Throat

The tonsils are the most frequently cared for foci of infection in this region. When they are found to be definitely infected, they should be treated or surgically removed.

Infected adenoidal tissue in the nasopharynx may share an equal position with infected tonsils as a focus of infection. Unrecognized infected adenoidal tissue may be the cause of "scratchy throats" complained of by some arthritics. The presence of infected tonsils or adenoidal tissue may cause focal infection elsewhere in the body, viz., the prostate or intestinal tract. Arthritic patients who have undergone tonsillectomies and still present active arthritis should be carefully examined for infected tonsillar regrowths, stumps, or tags, infection in the small crypts concealed behind the pillars or beneath scar tissue, infected lingual tonsils, and infected lymphoid tissue in the throat.

Table III illustrates the inadequate diagnosis of tonsillar infection prior to study and the amount of previously undiagnosed additional infection revealed by study of 200 consecutive cases taken from a group of 505 patients.

Table III

	99 Atrophic	*77 Hypertrophic*	*24 Mixed*
Tonsils removed prior to study	55	20	11
Infected tonsils found upon study	24	34	12
Infected tonsil tags and regrowths found upon study	12	2	0

The nasal accessory sinuses may become infected and act as a primary cause of the arthritis. There may be found single or multiple sinus involvement, with acute or chronic infection present. It is important to emphasize the need for keen diagnostic skill and the use of radical treatment only after conservative measures fail. Satisfactory results from surgery are achieved only when the operation is complete and thorough. Any underlying causes related to the sinus involvement must be properly cared for to effect a cure.

Table IV shows the presence of diagnosed sinusitis before critical study, and previously undiscovered infection revealed by study, in a series of 200 consecutive cases taken from a group of 505 patients:

Table IV

	99 *Atrophic*	77 *Hypertrophic*	24 *Mixed*
Diagnosis of sinusitis before study	6	3	1
Diagnosis of sinusitis upon critical study	21	17	8

Genito-urinary Tract

The genito-urinary system is a frequent source of infection and should be carefully reviewed in all critical analyses of arthritics. An infection in the prostatic gland or seminal vesicles is usually secondary to infection found elsewhere in the body, viz., dental, tonsil, or gastro-intestinal. Infections in the prostatic gland are seldom of gonococcal origin. An infected prostate will not respond to treatment as long as causal or feeding foci remain. Severe systemic or local reactions in the involved joints may occur if the gland is massaged too vigorously when treated.

Table V shows the number of cases of arthritis in which the prostate was found to be infected and contributing to the arthritis before critical study, and the additional infection found in the gland upon further analysis:

Table V

	99 *Atrophic*	77 *Hypertrophic*	24 *Mixed*
Infected prostate (before study) .in	8 of 39 males	1 of 21 males	0 of 14 males
Prostatitis found (upon critical study) .in	18 of 39 males	14 of 21 males	11 of 14 males

Infections in the upper urinary tract frequently activate arthritis. Four previously undiscovered cases of pyelitis were found among 99 atrophic arthritics, 3 among 77 hypertrophic arthritics, and 1 in the group of 24 of the mixed type. Cystitis was found for the first time in 2 of the 99 atrophic cases, in 1 of the 77 hypertrophic cases, and in none of the mixed cases studied.

Nonspecific infections of the female pelvis are seldom directly related to the arthritis present. When these foci are found, they involve the cervix and endocervical glands with cervical erosion, cysts, salpingitis, and parametritis. When the cervix is infected, a thorough examination should be made by a gynecologist to determine the extent of the pathology discovered. When the cause of profuse leukorrhea is removed, there is marked improvement in the general health of the arthritic. Table VI shows the number of cases of endocervicitis treated prior to critical study and previously undiscovered pathology revealed by critical study:

Table VI

	99 *Atrophic* 61 females	77 *Hypertrophic* 54 females	24 *Mixed* 11 females
Endocervicitis treated prior to study	2	0	0
Endocervicitis found upon critical study	10	4	0

Gastro-intestinal Tract

Study of the gallbladder and biliary tract reveals that infection there may operate as a definite precipitating factor, though the incidence of such infection is much lower than in the other sites discussed. The remainder of the gastro-intestinal tract is a more frequent source of toxemia. In a study conducted at the Abington Memorial Hospital in a group of 200 consecutive cases in a series of 505 cases, among 99 patients with atrophic arthritis cholecystitis was present in 5 atrophic arthritics, and cholelithiasis in 4 atrophic cases. In 77 hypertrophic arthritics studied, 10 had cholecystitis and 11 cholelithiasis. In 24 of the mixed type, 3 had cholecystitis and 2 cholelithiasis.

Too frequently the colon is ignored as a focus of toxemia or actual infection in arthritis. The intestinal tract of many arthritics may show visceroptosis and an abnormal amount of stasis. Gastroptosis, hypochlorhydria, or achlorhydria may be present in the stomach. The colon may show elongation, dilatation, reduplication, marked tortuosity, and the presence of diverticula. Toxic products originating in such an intestinal tract as a result of bacterial activity or improper digestion may be absorbed in the portal circulation and may play an etiologic rôle in the arthritis. There has been much debate as to the possibility of toxic influences from this region in the absence of demonstrable infection, but clinical experiences which cannot be detailed here indicate clearly that something of the sort does occur. Recovery often results when therapy is directed to the intestinal tract, especially when exhaustive studies of other regions of the body have yielded few other points of attack.

In a series of 200 consecutive cases critically studied, the findings obtained are shown in Table VII.

Table VII

	99 *Atrophic*	77 *Hypertrophic*	24 *Mixed*
Intestinal stasis	85	64	19
Colitis	1	2	0
Diverticula	1	2	4

Table VIII reveals that a majority of patients in a series of 200 consecutive cases of arthritis critically studied presented at least 3 and often 4 foci of infection. Disregard of the importance of the foci enumerated in Table VIII and their proper care would probably retard and possibly prevent arrest of the progress of the disease or the possibility of a cure.

Table VIII

Of 99 Atrophic Cases:

3 presented 1 focus of infection
21 presented 2 foci of infection
34 presented 3 foci of infection
26 presented 4 foci of infection
13 presented 5 foci of infection
2 presented 6 foci of infection

Of 77 Hypertrophic Cases:

13 presented 2 foci of infection
25 presented 3 foci of infection
21 presented 4 foci of infection
17 presented 5 foci of infection
1 presented 6 foci of infection

Of 24 Mixed Cases:

3 presented 2 foci of infection
6 presented 3 foci of infection
11 presented 4 foci of infection
3 presented 5 foci of infection
1 presented 6 foci of infection

Summary

Foci of infection are to be found in arthritics principally in the oral cavity, nose and throat, genito-urinary and gastro-intestinal tracts, and about in the order given.

A critical study of 200 consecutive private, dispensary, and ward patients revealed that the majority showed more than one focus of infection.

Foci of infection should be considered no matter what the disease studied. Their relationship to systemic disease can best be determined by critical analyses of the opinions of consultants competent in their specialties, but these opinions should be interpreted by the internist.

Although infections alone or in combination contribute to keep the arthritis active and the patient in a state of imbalance, they should not be regarded as the sole cause in this syndrome, and require for evaluation careful analysis of all other etiologic factors which might prevent the patient's recovery.

The rheumatoid service of the Abington Memorial Hospital gives first consideration to the establishment of an "equilibrium" within the major systems of the body and only after this is attention directed to the care of foci of infection.

The patient in whom infection is present should be treated as well as, and in conjunction with, the foci found. The treatment or removal of foci of infection revealed by careful study of the ill arthritic affords no panacea in the treatment of the disease, but if the patient is studied and treated individually, such focal infection as may be present will appear in its proper perspective to the syndrome as a whole.

ABSTRACT OF DISCUSSION

George M. Piersol (Philadelphia): It will be recalled that there are two schools of thought on the subject of focal infections. There are those who follow the clinicians of a past medical generation, who were enthusiastic in their belief that most of the ills of man, including arthritis, could be definitely attributed to various focal infections. This trend obtained for the past quarter of a century. We have all seen the wholesale removal of tonsils, drilling of the sinuses, and what not, in the effort to control chronic constitutional disturbances.

Within recent years a reaction has occurred, headed by such careful observers and laboratory workers as Dr. Russell L. Cecil and his group, and Dr. Hobart A. Reimann in Philadelphia, who question the rôle that foci of infection play in the etiology of these chronic diseases. This question has been considered sanely and conservatively by Dr. Bach, who has done the wise thing in the present state of our knowledge—he has sailed a middle course, recognizing that foci of infection are present and may be factors, but that the entire disturbance cannot be attributed to these foci.

The multiple etiology of arthritis has been expressed not only by Dr. Bach but by those who preceded him, and we should all bear it in mind. We should not be overenthusiastic about assuring individuals that they can be relieved of their distressing arthritic symptoms merely by the removal of some focus of infection.

The tables shown by Dr. Bach, giving the location of the foci, were extremely interesting and, on the whole, correspond to general clinical experience. The most common sites for foci of infection are in the oral cavity and in the nose and throat, after which the other areas of the body that are subject to stasis and bacterial invasion must be considered.

As these tables were shown, it occurred to me that it would be interesting if someone would study a group, similar in number and age and from approximately the same social strata, and determine the frequency with which foci of infection in these areas could be demonstrated in nonarthritic individuals as compared with their frequency in arthritic individuals. I am inclined to believe that if, for example, one should study the intestinal tract in an equal number of individuals of the same age and build, as many redundant colons, etc., would be found in the nonarthritics as in the arthritics. This shows how difficult it is to evaluate the rôle of these abnormalities in the etiology of arthritis. It is one reason why there has been a definite trend to belittle to some extent the rôle of these sources of infection in the management of this disease.

The important lesson which Dr. Bach has emphasized is, first, to realize that, in dealing with an arthritic, we are dealing with a general disturbance; second, that the etiology of this disease is multiple and it is dangerous to go off on a tangent and be overenthusiastic about any single etiologic factor that may present itself. Third, when these patients are to be treated, they must be surveyed as a whole and be managed from a general standpoint. To get them in what Dr. Bach has aptly termed "the state of equilibrium" is the most important step before attempting any radical procedures. He means by this that the blood must be studied, the metabolism must be determined, the whole physiology including the psychology must be considered, and the condition of the vascular system must be taken into account. The result of removing foci is infinitely more successful in the patients who have been treated along these general lines than it is in those who are merely told to have their tonsils taken out.

Every physician has observed the dramatic results which from time to time follow the removal of foci of infection. Unhappily, these results are too few. Who has not seen a case of arthritis, neuritis, etc., clear up miraculously after a single infected tooth has been pulled, or a pair of diseased tonsils have been removed? But, for every such instance encountered, there are innumerable and discouragingly large numbers of people whose diseases are apparently little affected by the removal of these foci. That is one of the factors which has brought the removal of foci into disfavor with not only patients but with some doctors.

Unfortunately, there seems to be no practical way of evaluating the amount of damage that a recognized or suspected focus of infection may do. We may see tonsils that we know are diseased, yet who has the temerity, if they are honest, to tell a patient that they know by taking out such tonsils that their chronically diseased joints will be better? Too often in the past that sort of advice has been given. In the natural desire to do something constructive for a patient, any probable focus of infection will be seized upon and its removal urgently advised in the hope that one of those miraculous results may be obtained. Unhappily, more often than not the attempt is doomed to failure.

Surgery in Rheumatoid Disease

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RHEUMATOID diseases fall almost exclusively into the medical domain. No single etiology and no specific treatment have been developed. For proper understanding one must range through the whole field of pathologic physiology and for treatment draw upon the manifold resources of dietetics, chemotherapy, and physiotherapy. In treatment it happens that surgery is an important arm of therapy which may easily be overlooked.

The first important application of surgical principles is in the prevention of disabling deformities. In such a disease as arthritis, in its severe forms, disabilities will come and it is important that the physician in charge is in possession of the knowledge as to what position of weak and stiff joints will be most advantageous for the possessor. For instance, in dorsiflexion of the wrist, the position of strength is simply maintained even in acute arthritis by means of the cock-up splint. Fingers which bid fair to be deformed and stiffened may be maintained in such a position that apposition of the thumb and one or more fingers will be available when the process has abated. Plantar flexion of the feet can be prevented by a plaster shell or by overhead pull. Knee flexion which will prevent walking later can be prevented by position. Similarly for elbows, shoulders, and other joints, there are optimum positions for partial or complete ankylosis which should be known and the lessons applied.

In this brief presentation, however, I am dealing with the results of burnt-out disease, leaving certain changes which of themselves constitute anatomic bars to function and which may be relieved by appropriate surgical measures, thus restoring function to these unfortunates. Such measures make all the difference between complete invalidism and locomotion and self-help, which in turn restore tone, encourage morale, and aid in the final termination of the disease. Two typical examples are hypertrophic synovitis

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of the knee and flexion contractures of the knee. Both are crippling and condemn the patient to a bed or chair, yet both may be only the end result of an active process long since past.

It should be the task of the physician in charge to build up the patient's resistance, to improve his muscular tone by physiotherapy and resistance exercises, and to decide when the disease process is quiescent, thus permitting the reconstructive surgery that will restore locomotion and function. Usually a period of 6 months to a year after active disease should elapse. The sedimentation rate should have moved back definitely towards normal. Anemia and low serum protein should be relieved by transfusions and plasma infusions. Vitamin therapy is emphasized, and before operation sulfanilamide or one of its congeners is probably helpful.

The contractured knee or knees will be considered first. Flexion over 15 or 20 degrees in these weakened subjects causes unsteady gait and may make standing or walking impossible. Such flexion is almost invariably due to contracture of the soft parts and not to bony changes. Ligaments, tendons, muscles, fasciae, blood vessels, nerves, and all soft structures passing the contractured joint have accommodated themselves to the new position and offer opposition to return to normal alignment. Therefore, restoration is not easy. Minor changes may be overcome by extension, by weight, and by hinged casts, but major contractures require operation. Wilson has devised a procedure by which such knees can be straightened. The operation is as follows:

Technic of Posterior Capsuloplasty

The skin preparation is started the day before the operation. Anesthesia as indicated is given, but is usually spinal. A tourniquet is applied to the thigh. An incision 12 to 15 cm. in length is made over the outer side of the knee. The iliotibial band and biceps tendon are exposed. The iliotibial band is cut transversely, approximately 2 inches above the joint interval. The external popliteal nerve is identified and retracted from the operative field. The biceps tendon is freed from the point of insertion upward 4 or 5 inches. The tendon is split for a distance of about 2 inches and the 2 portions are divided at different levels and turned back, leaving them in a manner to facilitate later suture and effecting a tendon lengthening of about 2 inches. Incision is made through the capsule at this point, opening the posterior compartment of the joint. The capsule is stripped upward from the posterior surface of the femur. The outer head of the gastrocnemius is separated and subperiosteal dissection is continued several inches upward above the knee joint and toward the midline of the femur.

Incision is made over the medial aspect of the knee from the adductor tubercle on the medial condyle to slightly below the joint line. The capsule is opened and the posterior capsule entered. Subperiosteal stripping of the capsule is done as on the opposite side to a point continuous with the dissection previously made. Gauze is passed through the wound posteriorly to the femur to serve as a retractor. The knee is acutely flexed, viewing the posterior capsular space wide open. The knee is then straightened by gentle manipulation, resulting in stretching the soft parts and breaking whatever adhesions might be within the joint. The tourniquet is now removed, as the bleeding is controlled. The wounds are closed and the ends of the biceps tendon are approximated as above mentioned. The knee is fixed in extended position by the application of a plaster cast from the toes to the groin. This cast is bivalved immediately.

In the Arthritis Clinic of the Abington Memorial Hospital we have had a number of patients who now go about on their feet instead of being hopelessly invalided in wheel chairs.

A still more brilliant and interesting group of cases is to be found in those who have huge, thickened, synovial membranes in the knees, with joints filled with fluid and often large rice bodies. These patients have knee motion, but attempts at function result in pain, increased swelling, and practically complete disability. In some cases there are herniations through the posterior capsule into the popliteal space, the so-called Baker's cysts. The active disease has disappeared, and no organisms can be demonstrated in such joints. Yet, as long as the thickened membrane exists, function will not be regained since motion at once traumatizes the lining and causes disability. The only cure is complete synovectomy. The operation is as follows:

Technic of Synovectomy

A tourniquet is applied to the thigh to facilitate dissection. The knee joint is opened by an internal parapatellar incision, which extends from the uppermost limit of the joint cavity to the anterior tibial tubercle. Contents of the joint are evacuated and the dissection of the synovial membrane begun from above downwards. Separation of the thickened synovia is easy in the upper portion, the so-called bursa of the knee. The lateral recesses are more difficult to clear completely of the inflamed membrane, but persistence with knife and scissors will enable this to be done. Often pannus will be found extending over the cartilaginous surfaces and this should be scraped away. If the patellar surface is greatly eroded, the entire patella may be removed to avoid subsequent traumatic arthritis, and it is usually best to remove the infrapatellar fat pad. At times an extension into the popliteal space may be present, the so-called Baker's cyst. This should be removed entirely by posterior incision, as it will be found that the lining membrane and contents are similar to that of the joint itself. After the dissection is completed, the tourniquet should be loosened and any active bleeders coagulated. It is not necessary to stop all oozing. The incision through the muscle and ligamentary layers is then closed by a running suture of chromic catgut and the skin by a lock stitch of the same material. A voluminous pressure dressing is then applied to the knee and a posterior moulded splint from the fold of the buttock down to the achilles tendon. This splint is kept in place for a week, during the early period of the healing of the wound itself, and is then removed to permit early active motion. Much depends on the patient beginning to move the knee as early as possible to prevent the formation of adhesions. Some patients will fail to co-operate and it will be necessary in 2 or 3 weeks to flex the knees forcibly under pentothal sodium or gas anesthesia to break up the early adhesions before they consolidate. In this period physiotherapy in the form of baking and massage will do much to shorten the convalescent period and improve the muscle tone. Weight-bearing may begin in from 2 to 6 weeks. No patient in this series has failed to get less than 90-degree flexion and in some the range of motion is entirely normal.

Enough has been said to call attention to the fact that certain end results of arthritis are surgical lesions. The chief rôle of medical treatment has ceased in arresting the disease. Restoration of function depends upon the correction of certain anatomic alterations, following which function may be restored with corresponding benefit to the whole life and outlook of the patient.

NOTE: The discussion of the papers by Drs. Pfeiffer and Bell follows Dr. Bell's paper.

SINS OF COMMISSION

That the sins of commission are as great as those of omission is an admonition familiar to all. It applies to many things. Anyone who has engaged in the teaching of physical diagnosis to medical students must recall its many violations. The medical student is very prone and ready to hear râles, cavity signs, and, very notably, friction rubs in the normal chest. It is the frequent experience of every busy consultant to have patients referred with alarming diagnoses from the inexperienced and uninitiated, only to find after the examination that the disorder is a mild or inconsequential one. The message of this editorial concerns the application of our admonition to the reading or interpretation of x-ray films of the lungs. Too often the normal findings are confounded with the abnormal; markings of insignificance are given an unwarranted significance; and direful diagnoses and prognoses concluded where there is little or no basis for them.

Several years or so ago it was the exception to make an x-ray examination of suspected cases of tuberculosis, whereas today it is the exception not to do so. Parenthetically, but emphatically, this is as it should be. From this ever-widening experience in the x-ray examination of the chest, and the correlation with the clinical material, and particularly from the vast accumulation of data contributed by case-finding surveys among the apparently healthy groups, there has been revealed a definite tendency to read into the markings and shadows on the x-ray film evidence of disease or abnormal states that do not exist. This free-wheeling does not apply only to students, tyros, and the less experienced, but also to seasoned veterans, consultants, and even the x-ray specialists. Enlarged bronchial trunks, peribronchial thickening, increased hilus shadows, and signs of pulmonary congestion have probably received the brunt of such interpreted assaults. Artefacts and deformities of the bony framework, which at times demand considerable experience for their differentiation, may also take a bow.

The most important thing, it would seem, is that an enlarging experience is gradually teaching us to recognize and become familiar with the normal and physiologic findings in the essentially normal chest. It is only after this that the abnormal can be accurately assayed.

Although it is not to be condoned to read into a film what is not there, neither can it be condoned to overlook what is there. Only from a rich experience and a rigid application can the plotting of an accurate course accrue.—*Diseases of the Chest.*

* * *

CEASE AND DESIST ORDERS

The work of the Federal Trade Commission, in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug, and Cosmetic Act of 1938 added to the Food and Drug Administration's control of the advertising claims and statements made on the labels of medicines or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in newspapers and magazines and over the air, comes more actively under the purview of the Federal Trade Commission, by virtue of the Wheeler-Lea Amendment.—*Jour. A. M. A.*, May 31, 1941.

Principles of Orthopedic Treatment of Arthritis

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AS THE time at our disposal is very limited, this presentation consists of a brief outline of orthopedic principles of value in the treatment of rheumatoid or atrophic arthritis. These principles are applicable in Still's disease and, to a limited extent, in osteo-arthritis.

Atrophic arthritis can be roughly divided into an acute stage in which the disease is active and a quiescent stage in which, although the patient does not suffer from the acute arthritis, there are at times deformities and impaired function left as a result of the acute stage.

During the acute stage splinting of the involved parts accomplishes the following objectives: The inflamed part is kept at rest. This does not result in increasing the amount of ankylosis which may be caused by the arthritis, but on the contrary, by allaying the acute process, will preserve motion and prevent deformity. Clinically, the result of splinting the involved joint or joints is shown by the decrease in pain, lessening of swelling, and improvement of the local condition.

Splinting can be accomplished by the use of either circular plaster casts, which may be bivalved later, or, in less acute cases, by the use of plaster splints. The spine is splinted by the use of a fracture bed. Splints upon the lower extremities may be connected by cross boards if involvement of the hip joint requires immobilization. In the upper extremity a similar device may be used to immobilize the shoulder.

The position of splinting is important. The ankle should be held in 90 degrees dorsiflexion, the knee in 5 degrees flexion, the wrist joints in dorsiflexion, and the elbow at 40 degrees of flexion. The hip joint should be held in slight abduction and very slight external rotation and 180 degrees extension. The shoulder should be kept at 75 degrees abduction and in neutral position between external and internal rotation.

A common mistake in the convalescent stage is that of allowing the patient to spend many hours sitting in a chair. This, unfortunately, allows the joints to remain in the position of the usual flexion adduction deformities.

During the acute phase, in which splints are necessary, preservation of muscle power is important, for when the arthritis subsides, it is necessary to have sufficient power to move the joints. Massage of muscles should be used in all but the most acute cases. As the inflammation subsides, muscle setting, which consists of contracting the muscle without moving the joints, should be used. This is increased as tolerated to 5 minutes of exercise every hour. The muscles which combat deformity positions should be exercised particularly. Broadly speaking, these muscles are the extensors, abductors, and external rotators.

Following muscle setting, assisted active exercises, nonweight-bearing exercises, and finally, weight-bearing exercises should be added. This program of exercises is regulated by the response of the patient. Any increase in activity of the arthritic process is a warning signal that the patient is being pushed too hard.

In those cases in which effusion into the joint is a prominent feature, the effusion should be aspirated under full aseptic precautions. Aspiration of the effusion aids in allaying the inflammatory reaction, relieves pain, and prevents stretching of the joint capsule and ligaments.

In the quiescent or burned-out stage, acute inflammatory symptoms have disappeared. The patient's general condition is usually much improved. The sedimentation rate is returning to normal or has returned to normal. In the case in which treatment has been successful and there has been little residual damage to the joint, there is no deformity which requires correction. In these fortunate, mild types of cases minor aids to weight-bearing, such as corrective shoes, elastic bracing, light back bracing, or corsets are at times of value. Corrective exercises to improve weight-bearing are important. Improper weight-bearing throws additional mechanical strain upon the joints which practically always have had some damage from the arthritic process.

Read before the Section on Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 3, 1940.

The less fortunate cases which have deformities without being ankylosed require that the deformities be corrected. In the milder cases, treatment with wedge casts will correct deformities. In cases which do not yield to wedge casts, correction may require lengthening of the tendons and release of contracted joint capsules. The osteotomies are at times of value in the correction of severe deformities.

Another group of cases are left with mechanical obstacles to movement. The typical case is the knee with hypertrophy of the synovial membrane which may require removal of the hypertrophied synovia. Cases of partial or complete ankylosis of the patella may require resection of the patella or arthroplasty of the patella.

Cases which progress to bony ankylosis and have been properly splinted so that the ankylosis occurs in the position of maximum function require no surgery unless the ankylosis is bilateral. In the cases with bilateral ankylosis arthroplasty, the operative formation of a new joint is usually indicated.

In conclusion, I would like to emphasize that preventive treatment by splinting and the preservation of muscle power in the acute stage is probably the most important single phase in the treatment of these cases.

ABSTRACT OF DISCUSSION

DeForest P. Willard (Philadelphia): I am so much in accord with what has been said in these 2 papers that I will simply emphasize some of the principles that have been brought out. I wish to discuss, first, the question of surgery in the acute stage of arthritis. The one aim of the surgeon is to prevent rather than correct deformities in a patient, which means that the surgeon must know both his anatomy and his pathology.

We all know that if a joint is inflamed, all the muscles around that joint go into considerable spasm, and we also know that if any group of muscles surrounding a joint are in spasm, the stronger muscles will outpull the weaker ones and cause deformities. In general, the flexors of the joint are always stronger than the extensors, and the pronators of a joint are nearly always stronger than the supinators. For instance, if you have a foot deformity in which there is also gravity helping with the deformity, the flexors and the tibials will outpull the extensors in the foot.

As to exercises, we all know that anything we do for a group of muscles around a joint in the way of exercising them will affect the joint. They are intimately connected as to circulation and nerve supply. If the muscles can be kept in good condition, the joint condition itself will be helped secondarily. We strongly disapprove of any manipulation in the acute conditions, but muscles can be massaged above and below the joint and, as already mentioned by Dr. Bell, muscle setting can be utilized.

In regard to the resting stage of arthritis, that is, the stage in which surgery can be used, this is a different kind of surgery than we ordinarily think of. Surgery in the treatment of arthritis is purely an adjunct to other treatment, and should always be used in very close co-operation with the internist who is in charge of the case. We can do more harm than good with surgery if we do it too early. The main reason for it in these arrested or quiescent cases is to increase body mobility with a minimum expenditure of the patient's energy. In other words, if an arm is deformed, and we can do something that will make it easier for that patient to feed himself or put on his clothes, the whole body metabolism will be distinctly benefited. If a deformity is in the lower extremity, where it is only a question of weight-bearing, we will be helping the patient infinitely if we can get the whole body posture in better position so that the muscles will not have to work as hard, and if we can assist the patient either from a bed to a chair or from a chair to a walking condition.

Remember, surgery should be used only in arrested cases, with very few exceptions. It is the mechanical factor that we are dealing with in the surgery of arthritis, and not the disease factor.

It is extremely difficult to know what type of surgery to use in these cases. So often we are dealing with a distinctly multiple condition. Dr. Bell and I have a case in the hospital at the present time with ankylosis of practically every joint in all 4 extremities—an absolutely bedridden case. To get that patient back on her feet, numerous operations will have to be done. The problem is to decide upon the type and minimum amount of surgery that will give the maximum amount of motility to this patient.

Ankylosis in general does not need surgery, unless it is in a bad position. If preventive orthopedics have been used in the early cases, then the ankylosis will be correct and no surgery will be needed. If the ankylosis is in a bad position and increases the muscle fatigue, then osteotomy of the most simple type should be used to correct the extremity.

Very often the joint disability is purely one of painful mechanics, that is, there may be some slight amount of bone deformation in the joint itself, such as spur formation, and the removal of a certain set of spurs may in a given case do good. Such a condition is found around the hip more than in any other joint, and the removal of these heavy spurs on the edge by acetabuloplasties has turned out to be very beneficial in certain types of cases.

Bony deformities are usually best handled by osteotomies. Some deformities may be due to tendon and capsule contraction. It is our problem to discover whether it is better to do tendon lengthening, a capsulorrhaphy, or whether it is better to do an osteotomy or correction of the bone and leave the joint alone. There is no hard and fast rule to follow in such cases.

Synovectomy is one of the few operations in arthritis which can be done rather early. In a certain number of cases, the thickened, swollen synovia is probably a source of infection, and may involve other joints as well. The operation, as Dr. Pfeiffer has described it, not only gives more mobilization to the joint but also in a certain number of cases may help in reducing some of the foci of infection.

One thing I want to stress is that the surgeon, both in the early stage and in the quiet stage, must be ruled almost entirely by the judgment of the internist who is handling the case. The surgeon comes in from a consultant standpoint only. He should never handle a case as a purely surgical problem. Surgery must in every case be an adjunct to the rest of the treatment.

Co-ordination of Therapy in Arthritis

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I AM appreciative of the opportunity to attempt to weave into a whole the series of critical papers you have just heard. It must be apparent to all of you that the importance of the problem of arthritis and related disorders has been greatly underrated in the past, and that there are few other chapters in medicine now developing so rapidly. In view also of the broad considerations presented by my associates, it must equally appear that the field of rheumatic disorders constitutes one of the largest chapters in medicine.

Whereas until recently arthritis was regarded as a disease of joints and scant attention was given to other systems of the body, it is now obvious to the tyro that it is a systemic disease, that many systems of the body are involved, such as the circulatory, nervous, and gastro-intestinal, and that actual joint symptoms may be minimal. As far as the characteristic symptomatology of the syndrome is concerned, this expresses itself chiefly in those structures derived from the mesodermic layer of the embryo which includes not only bone, cartilage, and tendon but also the connective, the muscular, and blood vascular tissues of the body. In this light the generic nature of the manifestations constituting rheumatic disorders can be better appreciated, and in this light it becomes easier to understand that any single approach to such a syndrome can hardly be expected to reach the many components of it.

Someone has well said that truth is many-sided, even simple truth, and there is direct relevance of this aphorism to arthritic disorders. In his presentation before the recent Bicentennial of the University of Pennsylvania, Lawrence Henderson remarked that disease processes represent responses to several rather than to single causes. Even today, however, a narrow or limited outlook upon the field of arthritis is common. This derives from the earlier emphasis upon the joints as the chief sites of the disorder, and perhaps the most signal advance recently made from the standpoint of the profession as a whole is that of recognizing the systemic nature of the problem and the fact that appropriate somatic control must be exercised before the local symptoms will be arrested.

It must be avowed that much investigation is still needed in elucidation of the full nature of rheumatoid diseases. At the moment it may be said that the problem appears, in part, to be one in which the so-called master tissues of the body are involved, especially perhaps the pituitary, in conjunction with a chain of endocrinous factors. The sequence of events transmitted along this chain as a whole may be initiated by stimuli of various sorts, such as fatigue, exposure, infection, trauma, and other agencies. In this broad light deviations occurring along the links or at the ends of this chain might be expected to induce, as indeed they do, a variety of phenomena, somewhat symmetric in nature. Such a simplification as the above must be regarded only as a tentative and tenuous hypothesis and yet the trend of events in arthritis, both from clinical and experimental aspects, compels us to entertain some such viewpoint. Certainly, the simple and almost elemental attitude which allocated to infection the chief rôle and, indeed, dominated the field for 20 years, is regarded by all serious students as in no way adequate to explain the symptomatology. This fact was obvious to a very small group of students, of whom the writer was one, as long as 25 years ago, but it seems that the profession has had to run the gamut of its enthusiasms and experiences before being willing to adopt a wider outlook. Now, however, that the way is cleared, infection can be seen in the light in which, indeed, it should have been viewed from the outset—as a factor not basically causative but potentially very influential when present.

In this light, again, there is room for contemplation, among arthritic patients, of the wide series of dislocations of normal physiologic processes in many of the great systems of the body.

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Whether these dislocations basically underlie the disease, constitute the disease, or are merely sequelae to the disease is, in many ways, of secondary importance. Such dislocations when present in arthritis constitute departures from the norm which require correction. This is not to say that arthritis is merely a disturbance of the vascular, nervous, or gastro-intestinal systems. It is far more complicated in its nature than that, but the course of events which leads to arthritis involves these systems. In view of our inability in many cases to reach the primary causes of the dislocations in these systems, it follows that we are compelled to treat the intermediary expressions of such dislocations.

Therapy along these lines is rarely thorough and it is here probably that difficulty chiefly arises among practitioners in general in treating arthritics as a group. Some of you may recall hearing that when the great Egyptian obelisk was raised in the Piazza del Popolo in Rome in 1589, it came very near to falling because the ropes became slack. It was indeed about to fall when a sailor in the crowd shouted out an exhortation to wet the ropes. This was done, the ropes promptly tautened, and the obelisk was erected. By analogy it is in some such way that we are today required to handle the sick arthritic. We are face to face with faulty mechanisms and devastating phenomena which at the moment can best be controlled in one way; namely, by influencing in a purposive manner the factors which accompany or underlie them.

As has appeared from the papers previously read, the sick arthritic presents dislocations in the vascular, nervous, gastro-intestinal, and locomotor systems of the body as well as sometimes in the respiratory system. As just mentioned, these dislocations must be regarded, in part, as peripheral expressions of central disturbances not yet directly accessible. The peripheral expressions, however, are definitely accessible and nowhere, for example, is this more clear than in the vascular system. Disturbances here are immediately open to many beneficial influences, including heat, massage, exercise, and the like. By the same token, disturbances in the nervous system are open to sedation, stimulation, and other agencies.

Experience with these deviations in the vascular and nervous systems has amply demonstrated that whereas symptomatology can be influenced temporarily by drugs and other agencies, a more fundamental approach consists in modifying or removing the load from which each of these systems is laboring as well as in improving their efficiency. This lesson was derived late in the therapy of arthritis and almost as a corollary to unsuccessful pharmacology.

Whatever the basic causes of arthritis, it is clear that a sufferer from it, because of his discomfort, because of the effort to carry on, or because of more fundamental reasons, is fatigued, usually greatly so, although he may not be aware of it. It is almost incomprehensible that the simplicity and significance of this principle waited so long to be understood. Fatigue of any nature involves by definition at least the nervous and the vascular systems, and on theoretic, physiologic, clinical, and pharmacologic grounds it has been amply demonstrated that the one great basic approach to the care of the arthritic of any nature and of any etiology lies in an understanding of the term "rest." This is not to say that other measures have no application; it is to say, however, that all such measures will have greater application if brought to bear upon this background. There is, indeed, a limited class of arthritics, albeit critically ill, in whom the solution of their difficulties is so simple that to put them to bed and keep them there may alone achieve convalescence or recovery.

The late Dr. S. Weir Mitchell fully understood these principles when he filled the little houses on Summer Street with neurasthenics, many of whom were arthritics, who received nothing more than rest, proper feeding, and massage. Dr. Mitchell knew nothing of focal infection but his results were magnificent and carried his name around the world because he understood the importance of the basic principles of physiology. These basic principles are just as significant today as they ever were, and now that there have been swept from the arena some overemphasized doctrines, it becomes important, and it should be easier, to direct attention again to the heart of the problem.

REST

1. Rest in recumbency improves the circulatory dynamics; it is especially important in the capillary beds.
2. Rest dilates constricted peripheral vessels because of added warmth referable to the bed clothes.
3. Rest facilitates the passage of fluids from tissues into vessels.
4. Rest modifies undue gravitational "pull" on ptosed and other organs.
5. Rest lessens overaction of nervous system by reducing psychic and physical stimuli (from activities and pain).
6. Rest permits replacement of the deficits and removal of the excesses which constitute fatigue.
7. Rest reduces energy losses and caloric demands.
8. Rest "splints" traumatized joints and muscles and permits repair.

One could dilate extensively upon the details to be considered in all that the term "rest" connotes, both for the vascular and nervous systems, but time precludes. Suffice it that whereas all the systems of the body are intimately related, in no instance is this relationship more obvious than in these two fields. A majority of arthritics present faulty body mechanics, and maintenance of the erect posture alone makes demands on the nervous system which in turn conditions the state of the capillaries at the periphery, already closed in the arthritic, as his cold hands often testify. If to this be added the strain of worry and anxiety, there is created a condition which no drug or any one measure can be expected to undo. Cutting this Gordian knot by putting the arthritic to bed with gentle sedation may achieve apparent marvels. To illustrate this in another field, McCann et al. (*J. A. M. A.*, Aug. 24; 40, pg. 753, Vol. 115, No. 8) have recently discussed "Orthostatic Hypertension" and have shown that a ptosed kidney may lead to hypertension unless the influence of gravity be removed by recumbency or support.

The practitioner cannot stop here, however; he must turn his attention next to the other systems of the body, of which perhaps the gastro-intestinal is the most compelling. It has been clearly indicated that the average diet in the United States is not optimal and it is certain that in the great majority of arthritics it has been even less nearly optimal. Whatever other factors may require rectification, the importance of optimal nutrition has been widely overlooked and should be regarded as constituting part of a foundation, upon which any useful measures can be expected to result more successfully. The arthritic syndrome cannot be defined as a deficiency disease, and yet there are many factors which so closely parallel symptoms encountered in deficiency states as to require consideration of all the factors relating to this general pathologic field. Spies has recently stressed the significance of mixed as against single deficiency diseases. Whether because of these factors or for other reasons, the gastro-intestinal tracts of these individuals present such deviations as enteroptosis, hypochlorhydria, colonic irritability or stasis, and the like, the results of which are, at least, to aggravate any other deviations already present. My associate, Dr. Edgar W. Spackman, in an unpublished review of the gastro-intestinal tract from the roentgen-ray standpoint, in 400 arthritics on the writer's services, has found such a high incidence of deviation from normal as to constitute a characteristic "pattern."

The Arthritic Diet

The ordinary diet is suboptimal in respect to the needs of the arthritic. The diet in arthritis should be:

Adequate in calories	avoiding a surfeit.
High in protein	to restore lowered plasma and fixed tissue protein.
High in vitamins	to make up for subclinical or partial avitaminoses.
Low in concentrated carbohydrate foodstuffs ...	to achieve maximal influence of vitamin B; to promote discharge of tissue water; to avoid deficits in mineral salts.
Moderately high in fat ...	to supply needed calories.

We often erroneously expect specific measures, such as the removal of infection or the injection of gold or vaccines, to rectify a complicated syndrome in which only the basic recuperative processes of nature can bring about rehabilitation. Many so-called specific measures have thus fallen ineffectually to the ground when, in fact, they might have been rewarded with significant success had the stage been adequately set for them. For these reasons much discredit has attached itself to vaccines, for example, which might be better regarded today if advantage had been taken of all conditioning factors.

Considerations such as the above have far more efficacy than the profession as a whole realizes, but there is an assumed familiarity with measures falling under such captions as rest and nutrition which is not necessarily justified. The details constituting the successful application of such measures may be very complicated. Such physiologic platitudes as "fresh air, good hygiene, and keeping the bowels open" may actually operate disastrously in arthritis unless applied with finesse and a knowledge of the precise objectives to be obtained. Much of the discredit which now attaches to the removal of focal infection derives from the fact that removal of a factor which may at one time have been pivotal amounts at a later stage to nothing more than a reduction by one of the total number of "drags" handicapping the arthritic. This principle is illustrated by the fact that many cases are seen by the writer in which the primary and objective steps have been well taken by those originally referring the cases. The arthritic has remained sick, however, and not until there has been established something approaching normality of operation in the major systems of the body has any escape from the disease been possible.

This general situation is well illustrated again in the now popular use of gold. Expectation exists in many quarters that the complicated problems of the arthritic are to be solved by a process as simple as the injection of gold, as to which, incidentally, the Council on Pharmacy and Chemistry of the American Medical Association has withheld sanction for either tuberculosis or arthritis. Whatever may be accomplished in this way, and there is no doubt that benefits definitely accrue in certain instances, basic disturbances of physiology such as visceroptosis, hypochlorhydria, muscle atrophy, and tissue edema cannot be expected to be influenced. Recently a woman of 42 was seen suffering from classical atrophic (proliferative) arthritis, in whom, however, all of the tangible "causes" of arthritis had been cared for. It was at once appreciated, however, that this individual was suffering from fatigue, anemia, low-grade tissue edema, faulty nutrition, and, as further study proved, an increased sedimentation rate. Upon the institution of complete bed rest, radically altered but optimal nutrition, mild sedation of the nervous system, gentle tonic medication, and attention to the gastro-intestinal tract, improvement was at once initiated. Later, massage and, finally, 5 transfusions for the anemia were given without raising the level of the hemoglobin. The sedimentation rate also remained unchanged, but symptomatic improvement was so striking that the patient felt herself restored to health. Incidentally, this case illustrates the fact that some of the criteria of arthritis, such as the sedimentation rate, may be erroneously applied to the problem and at least equal attention should be directed to other factors, such as tissue edema, which played a major rôle in the subjective symptomatology of this patient.

Another case can be cited of a business man, age 47, who had 3 places of business at removed sites in a southern state, which he visited once a week respectively. This patient was obviously fatigued when first seen and was also the subject of nervous imbalance. Analysis revealed almost nothing in the way of the tangible factors usually sought. He did present, however, atony of the gastro-intestinal tract to an extent that there was visible under x-ray study what appeared to be a double colon. This was, indeed, nothing more than an exceedingly long gut, duplicated upon itself, a not uncommon finding in arthritics. Upon a program of bed rest, sedation, optimal nutrition, and attention to gastro-intestinal function, this individual began at once to improve and in the course of 5 or 6 weeks was able to resume his affairs under controlled conditions of living. Cases of this sort bulk large in the writer's records and illustrate the importance of the basic principles of rest, optimal nutrition, and restoration of balance to the nervous system, to which attention is now being drawn.

As remarked earlier, many lines of therapy are required for complete correction of the conditions encountered among arthritics. The removal of infection, institution of heat and massage, and the injection of gold or nonspecific protein may all appear to be indicated. It is of paramount importance to realize, however, that the arthritic is at best a fragile subject. Such measures as those enumerated may do great harm as well as good. It becomes essential, therefore, to provide that each agency be carried out with conservatism and that no two or more of these measures, however successful they seem, be so administered as to permit one to add to the demands already made by the other. The writer has seen countless examples of arthritics to whom theoretically appropriate measures were being applied in such a way as to reduce the individual in toto to an even lower ebb.

On the basis of the previous articles in this symposium and also upon what has been stated in this paper, it will appear that there is no standardized treatment which can be applied in blanket form to arthritics as a group. It is necessary in the first place to distinguish between the two great types of the disease and further subdivisions of it such as fibrositis, myositis, and the like. There are likewise many considerations to be observed in the treatment of the two types deriving from the fact that the atrophic arthritic is usually more ill in a gross clinical sense of the word and caution must be observed in all that is brought to bear upon him. Per contra, it is generally thought that the hypertrophic arthritic is of a more robust type, though in the opinion of the writer this appearance of robustness is often more apparent than real. Immobilization in atrophic arthritis may lead to ankylosis unless intelligent precaution is observed to prevent this by means of physical therapy and gentle active motions by the patient himself. In contrast to this, the hypertrophic arthritic never experiences ankylosis except, unusually, in the case of the spine, and immobilization can therefore be indulged in more freely. While trauma aggravates both types of the disease, including fibrositis, it is particularly injurious to hypertrophic cases which may never recover if subjected to abuse, even from what may appear to be conservative massage.

However, when all is said and done, there are certain minimal principles that can be usefully applied to all arthritics in the sure confidence that they will at least do no harm and are usually productive of great benefit and even cure. This is not to be interpreted as implying that all arthritics treated upon the basis of the oversimplified plan about to be presented will necessarily recover. Whatever further specific therapeutic assistance they may need, however, will follow with greater prospects of success if a certain groundwork be laid. This groundwork can be laid with considerable precision and it may be well to recite here, even at the cost of some repetition, the general sequence of steps which provides it.

In the opinion of the writer and in that of nearly all informed, dispassionate observers of the arthritic scene, systemic as well as local rest is the sine qua non of all therapy. In view of the fatigue and nervous harassment to be observed almost universally in these patients, mild tonic medication is often useful and gentle sedation of the overwrought nervous system may be even more indicated. It is next to be appreciated that, whether or not there be active precipitating factors in the given case, such as massive focal infection and the like, the nutrition of nearly all arthritics is less than optimal and is usually definitely bad. This does not mean that the arthritic may not appear "well nourished" or even fat, but a refined analysis will amply bear out this statement. The institution of optimal nutrition is, therefore, a necessary early step. Some of the acute symptomatology may be quickly reached in this way, and in addition there may be afforded a foundation for rectification of various types of imbalance, such as partial avitaminosis, anemia, and the like.

Tissue edema plays a much greater rôle in the symptomatology of arthritis than the profession yet realizes. Unless the basic causes of it are controlled, as sometimes happens after removal of infection, for example, it can be safely influenced only through the combined instrumentalities of rest, the prone position, the conservative use of physical therapy, and a balanced nutrition which leads away from rather than towards water retention. Most arthritics, when put to rest, will benefit by a diet which supplies the full caloric demands but rarely more—a diet high in salts and vitamins, high in protein, relatively low in concentrated carbohydrate foodstuffs, and containing fat in amounts compatible with good digestion, to make up the desired caloric quota.

In conjunction with proper nutrition, the gastro-intestinal tract should come in for sharp consideration, for in either a primary or secondary sense it reflects part of the picture of ill health which all severe arthritics present. Replacement therapy with hydrochloric acid when needed, together with sedation or activation of the gastro-intestinal function, may be of great contributory value.

Study of the condition of the blood should now be entered upon, meaning not only the blood count but also, where facilities permit, determination of the plasma proteins and the albumin-globulin ratio. Such data often reflect conditions which would not otherwise be apparent. Following these several measures, time should be allowed for attainment of a general equilibrium, at least as far as this is possible in any given case without more purposive directional therapy. The general practitioner will often be surprised at the extent to which his patients will then improve, not only objectively but even subjectively, following these simple measures.

At about this stage the average patient should be examined for such precipitating factors as focal infection, but the clinician should be warned that apparently trivial examinations may require the arthritic to meet increased doses of antigenic or otherwise toxic material. Many patients have been made seriously ill for the first time when examined, and especially when treated, for infections, however justifiable eventual removal of them may have been.

Depending somewhat upon whether radical measures are to be instituted in the way of surgery, the patient may now well benefit by the administration of liver, iron, or even arsenic. In addition to being hemopoietic in its influence, arsenic is also a so-called "metabolic whip" if used conservatively in small doses over a considerable period of time. These measures will assist in the attainment of a physiologic balance, and when this has been achieved, even partially, the patient is a better subject for such added toxemia as may be forthcoming from prostatic massage, treatment of gingivitis, the removal of teeth, treatment or enucleation of the tonsils, removal of a gallbladder, etc. It may be well to state, parenthetically, that appreciation of the influence of mild gingivitis is far from adequate. It may be added also that prostatic massage frequently fails of its purpose because the facts are not fully elicited.

As remarked above, physical therapy may be of extraordinary value and in some cases may be quite essential to recovery. The bases of physical therapy are heat, massage, rest, and exercise. Properly used these measures may not only improve circulatory conditions locally, modify pain, and restore tone to atrophied muscles, but they may even contribute to an increase in the red cell count. Physical therapy, which should include also postural exercises, will conduce toward reduction and especially prevention of deformity. Unfortunately, many technicians practicing physical therapy are animated by an undue zeal, springing, not unnaturally, from personal knowledge of the benefits which physical therapy can achieve. Unless technicians are advised that the treatment of arthritics differs from that of most other conditions, in that it must be conducted gently or not at all, they may add insult to injury by further traumatizing the joint tissues. The crime of "freeing adhesions" and churning joints is commoner than supposed. It may be said by way of epigram that treatment of arthritic joints by means of physical therapy should be directed anywhere except to the joints.

Orthopedic assistance may be of great value, though in principle the orthopedist sees arthritics chiefly because the internist and the general practitioner have allowed deformities to arise. Most arthritics present faulty body mechanics and the practice of training them to lie in dorsal decubitus or even in opisthotonos and to avoid, with proper posture, the deforming influence of gravity may not only undo but, better yet, may prevent distressing deformity. Active breathing exercises taken in optimal positions are very useful.

Attention should again be called to the fact that the more radical measures, such as vaccines, the use of gold, hyperpyrexia, severe operations, and the like, should be reserved until some such late stage of therapy as is now presumably reached. Not only will such measures be then better withstood by the patient but the practitioner will be surprised to find that many of these agencies, often too enthusiastically touted by their proponents, will not be needed at all. This is eminently true in the clinic of the writer and his associates, where the results of a physiologic approach to the disease are such that a deliberate effort must be made to find cases toward whom vigorous medication of any kind can be justifiably exhibited.

The psyche of severe arthritics is usually disturbed. This sometimes reflects a congenital trend, but in any event it is often the result of pain, the pressure of life, the effort of carrying on, etc. This means that many arthritics present an oblique attitude toward life for which they can hardly be blamed. A vicious cycle may present in that the arthritic will not take proper steps until his psyche is improved and his psyche cannot be expected to improve until he has taken the proper steps and has been relieved of impossible burdens. Those who would treat arthritics successfully should acquire some of the outlook of the psychiatrist, at least as far as a preliminary understanding of this field is concerned. Without insight, intuitive or acquired, into the personality of the chronically ill, the well-intentioned therapy of the practitioner may seem to the patient hardly more than a form of bungling, especially as the patient has often learned more about the disease, at least as far as his own case is concerned, than the practitioner knows.

ORDER OF PRESCRIPTION FOR THE SICK ARTHRITIC

1. Rest.
2. Sedation and/or stimulation.
3. Optimal nutrition in the refined sense.
4. Proper gastro-intestinal function.
5. Time for establishment of a general equilibrium.
6. Examination for foci of infection.
7. Medication, such as iron, arsenic, nux vomica, etc.
8. Treatment of foci, conservatively.
9. Use of physical therapy, conservatively.
10. Orthopedic help.
11. Last, if at all, vaccines, gold, etc.
12. Psychic re-education.

It is perhaps not remarkable that practitioners as a group, harassed as they are with weighty problems of many kinds, should await and eagerly seize upon new and untried recommendations alleged to have value. Sometimes these recommendations are deserved. More often, however, they are not, as discarded paraphernalia and pharmaceuticals amply testify along the road which arthritics have trodden *pede claudo*. It is as true of arthritis as of any other disease that an adequate therapeutic approach must be based upon some understanding of the physiologic deviations operative to produce it. As has been frequently avowed in this symposium, full knowledge of these deviations is far from available, but enough is known to establish a premise upon which therapy can be erected of most signal value to arthritics. This statement is not meant to allocate superior qualifications to the writer and his associates beyond those of deep and sustained interest in the problem and, above all, willingness to philosophize over physiologic leads often regarded as trifling.

A successful therapeutic grasp of the problems presented by the arthritic may be had by any internist or general practitioner who is willing to spend the time and effort necessary to this end. In thus equipping himself the practitioner will have not only the gratifying experience of handling with satisfaction most of the arthritics presenting themselves to him but he will also find, somewhat to his amazement, that he has acquired at the same time a wide understanding of chronic disease at large which will be equally useful. The phenomena of arthritis are so varied that those who study them find exemplifications of the same phenomena in other chapters of medicine and especially in that group of people, many of them so-called neurasthenics, who cannot be adequately categoried in any particular pathologic field. Here the rewards are great because nearly all of the unmapped problems presented by these unfortunates derive, like spokes of a wheel, from a common hub and relatively small importance attaches to which particular part of the rim any spoke may reach.

In sum, treatment of arthritics cannot be reduced to a formula and no generalizations will replace study of the problem. Therapy based upon the physiologic deviations accompanying the disease will bring splendid rewards to both patient and physician. Arthritics have not deserved the therapeutic abuse they have often received at hands unfamiliar with the nature of their disabilities. However, perhaps no other field of medicine will so quickly bring local and wider repute to him who has become a student of the subject and has therefore heeded the admonition attributed to Socrates: "The way to gain a good reputation is to endeavor to be what you desire to appear."

MACFADDEN'S BATTING AVERAGE

For 50 years Bernarr Macfadden has been a crusader against medicine, prudishness, cigarettes, and other things.

"His greatest disappointment has been his battle against medicine," Alva Johnston says in *The Saturday Evening Post* of June 21, the first of two articles telling of the career of the man who believed himself "the master of the golden secret of the cure of disease."

After one-half a century of warfare against the medical profession, "to some extent Macfadden has admitted that he was on the wrong track," the article says. "He has staffs of regular physicians at his physical culture sanatoriums."

Macfadden's lifelong batting average for all his crusades would be something like this, according to the *Post* article:

Against prudishness	1.000
Against medicine*	.000
Against corsets	.890
Against muscular inactivity	.333
Against alcohol	.250
Against cigarettes	.000
Against white bread	1.000

The article in the *Post* says that to Macfadden, the crusader, there was only one real disease—overeating—and only one cure—dieting or fasting, plus exercise.

With his profound belief in himself, Macfadden did not hesitate to treat every known disease without fee. "The treatment was fundamentally the same for oily skin, locomotor ataxia, fits, weak eyes, weak mind, creaking knees, heart disease, writer's cramp, telegrapher's wrist, baseball player's glass arm, lover's broken heart, red nose" and others.

SCHOLARSHIP AWARDED NEGRO NURSE

Miss Mary J. Culver, R.N., of the Cheyney Training School for Teachers, has been awarded the scholarship in health education for a negro nurse, teacher, or health education worker, which was offered by the Pennsylvania Tuberculosis Society for the 1941 summer session of the University of Michigan at Ann Arbor.

Miss Culver, who is the school nurse at Cheyney State Teachers College, received her nursing education at Grady Municipal Hospital in Atlanta, Ga. She is also a graduate of Spellman College, Atlanta, receiving a Bachelor of Arts degree in 1937.

Her experiences included work as a visiting nurse for the Metropolitan Life Insurance Company, teaching a Red Cross course in home hygiene in Atlanta, and nursing duty at the Sea View Hospital on Staten Island, N. Y. She has also taken work in principles of public health nursing and educational psychology at Columbia University in preparation for a Master of Arts degree.

The judges who passed upon the qualifications of applicants for the scholarship were C. Howard Marcy, M.D., and W. Roderick Brown, M.D., Pittsburgh; William B. Perry, M.D., and Daniel A Brooks, Philadelphia.

WHO SAID "GOOD OLD DAYS"?

Reprinted from "Instructions to Employees"
issued by Carson Pixie, Scott & Co.,
Chicago, Ill., 80 years ago.

Notice to Employees

Store must be open, 6 a. m. to 9 p. m., the year round. Store must be swept; counters, base shelves, and showcases dusted. Lamps trimmed, filled, and chimneys cleaned; pens made; door and windows opened; a pail of water, also a bucket of coal, brought in before breakfast (if there is time to do so), and attend to customers who call.

Store must not be opened on the Sabbath unless necessary, and then only for a few minutes.

The employee who is in the habit of smoking Spanish cigars, being shaved at the barber's, going to dances and other places of amusement will surely give his employer reason to be suspicious of his integrity and honesty.

Each employee must pay not less than $5 per year to the church and must attend Sunday School regularly.

Men employees are given one evening a week for courting and two if they go to prayer meeting.—*Highway Builder.*

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* Doubtless meaning its practitioners.

A Study of Neonatal Mortality

RALPH M. TYSON, M.D.
Philadelphia, Pa.

CUSTOM has established the necessity for the chairman of the Pediatric Section to present a paper as his contribution to the scientific program. Most of you know that, for a good many years, difficulties of the newborn period have been of great interest to me with the challenge of neonatal mortality standing foremost. Perhaps there are other problems of greater interest, but none that need more careful attention by the medical profession. The first-month mortality, particularly that of the first day, is a challenge to obstetricians and pediatricians. Many factors must be considered and perhaps old ideas will have to be discarded. New concepts of the situation can be formed only when sufficient study has been made of each individual case and, if possible, the preventable factors pointed out. There must be an earnest desire on the part of pediatricians and obstetricians who are responsible for newborn babies to overcome the difficulties that are now recognized. That something can be done about the situation has been demonstrated in Philadelphia by one hospital which has reduced the combined stillbirth and neonatal mortality rate from 83 to 41 in 10 years and to 26 during the 3 summer months of this year. The combined stillbirth and neonatal rate for the City of Philadelphia last year was 54.3.

Three years ago a committee was appointed by the Director of Health to make a study of neonatal deaths in this city. The committee was to work in accord with the Maternal Mortality Commission and the Stillbirth Committee in making a definite attack on the altogether too high maternal and infant mortality rates. The Philadelphia County Medical, Obstetrical, and Pediatric Societies have been co-operating. Last year I presented before the Philadelphia County Medical Society the data secured in the study of neonatal deaths for 1938. This seems to be an appropriate place to present further data for the year 1939. A comparison of the 2 years should prove interesting and helpful. A clearer understanding of our problem may be achieved if some information collected by the Children's Bureau for the United States and some collected by the Pennsylvania State Health Department is brought to your attention also.

Studies of infant mortality throughout the expanding birth registration areas of the United States during the preceding 25 years show some provocative and rather startling facts. During this period of time the total infant mortality of the first year of life has been reduced more than one-half. The mortality from the second to the twelfth month has been reduced by almost two-thirds, but the neonatal or first-month mortality has been reduced by only one-quarter and fatalities occurring in the first day of life are essentially the same as in 1915. Chart 1 illustrates these findings in a graphic way.

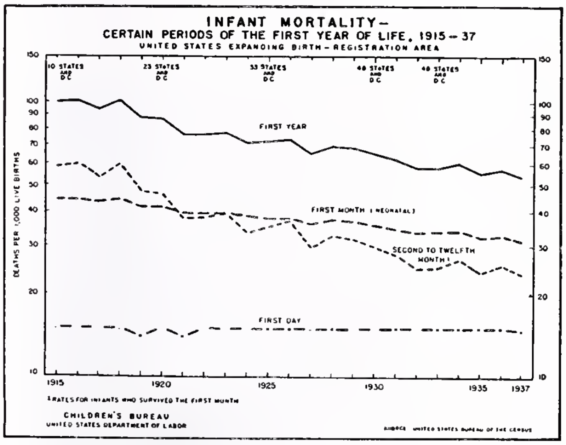

Chart 1.

In Chart 2 the number of infants dying in each month of life in the United States during the year 1935 is shown. Almost 70,000 died during the first month, while nearly one-half of that number died in the first 24 hours. In addition, there were almost 75,000 stillbirths. Very little change has occurred since that time. It has been estimated that one-fifth of the neonatal deaths and two-fifths of the stillbirths might have been prevented. A rapid decline in infants dying during later months of the first year is noted. Demonstrations have been given

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Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

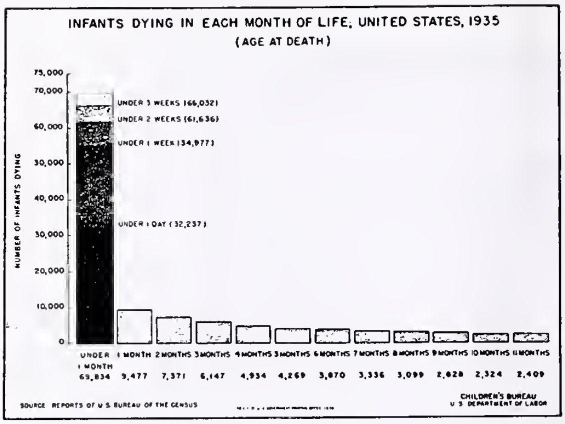

Chart 2.

in several parts of the country at various times proving that adequate prenatal care will definitely reduce these numbers, but it appears more difficult to educate the lay than medical members of society to this great need. Many expectant mothers do not understand the necessity for medical advice during pregnancy and, therefore, do not seek it. That large numbers fail to receive medical attention at delivery is well shown in Chart 3. Since the trend toward hospitalization for delivery is in full speed, it is surprising to learn the facts presented in this chart. In some of the southern states a large proportion of the babies are born without medical supervision. Even in Pennsylvania more than 1 per cent of the births are unattended.

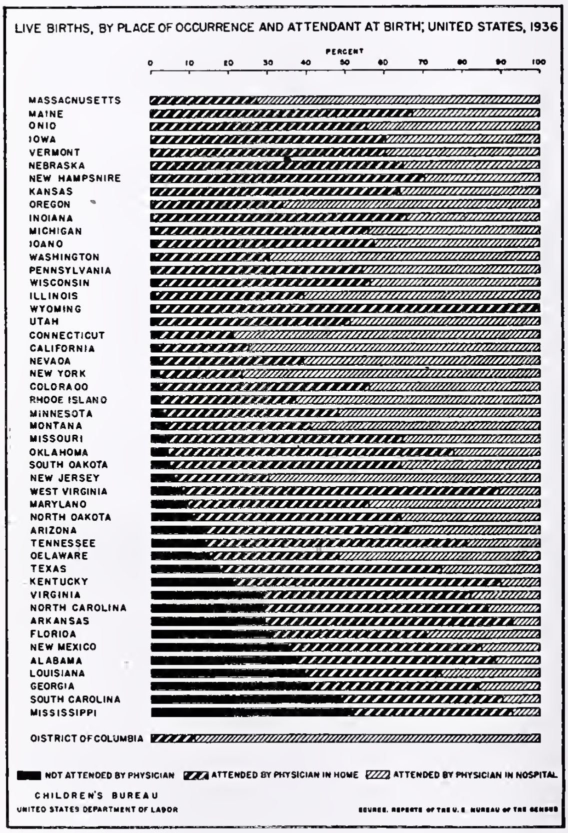

Chart 3.

Existing needs for a more careful consideration of infant mortality have been forcibly pointed out by Tandy in her recent survey of infant and maternal mortality among negroes in the United States. More than one-half (55 per cent) of negro births are attended by nonmedical persons. Of the 21,000 negro infants who die in the first year of life, 11,000 succumb in the first month, a rate of 82. Prenatal and natal causes are responsible for 41 per cent. The stillbirth rate is 66 per 1000 births. Last year, in Philadelphia, 5007 of the 30,232 live births were of the colored race, and of this number 193 died in the first month. This is a rate of 38.5 as compared with the total city rate of 28.6.

Table I

Year	*Births*	*Neonatal Deaths*	*Rate*	*Still-births*	*Rate*
1920	220,462	9,292	42	10,010	45.4
1925	215,120	8,405	39	9,368	43.6
1930	189,458	6,751	36	7,957	42.0
1935	161,166	4,889	30	5,887	36.5
1938	165,986	4,743	29	5,295	31.9

A glance at the records for Pennsylvania during the past 20 years at 5-year intervals is shown in Table I. Exact figures for 1939 are not available as yet. The birth rate has fallen from approximately 26 to 14 per 100,000 population. There were 54,376 fewer babies born in 1938 than in 1920. Neonatal deaths and stillbirths have decreased by slightly less than one-half and the rate has dropped from 42 to 29 and from 45 to 31 respectively. Publicity in the daily press accentuating various phases of maternal mortality during the past 10 years has probably awakened both professional and lay interest to the problem. Further reductions will be more difficult to secure unless a concerted, state-wide effort is made.

Table II

	1930	*Rate*	*1939*	*Rate*
Births	35,548	18.19	30,232	14.69
Stillbirths	1,609	43.3	810	25.7
Neonatal deaths	1,184	33.3	866	28.6
Infant deaths over 1 month of age	1,088	36.0	433	14.0

Reviewing stillbirths and neonatal deaths in Philadelphia for the 2 years of 1930 and 1939, Table II shows the stillbirth rate to have fallen from 43.3 to 25.7, whereas the neonatal rate decreased only from 33.3 to 28.6. The infant death rate after one month of age dropped from 36 to

14. The great reduction in the stillbirth rate can, no doubt, be attributed to the efforts of the Maternal Mortality Commission, while the remarkable fall in infant deaths past one month of age is due perhaps to pediatric care and preventive measures generally adopted by parents, physicians, and health departments. The small reduction in neonatal deaths may be ascribed to several factors. In previous years there was no clearly defined method of determining what constituted a neonatal death; consequently, a great deal of confusion existed in the differentiation between a stillbirth and a neonatal death. According to standards generally accepted today, any baby who has reacted in one or all of the following ways and subsequently dies is considered a neonatal death: voluntary breathing, beating of the heart, or muscular movement. Classification made strictly in accordance with these criteria would be bound to affect the statistics, retarding improvement in neonatal mortality rates and hastening that in stillbirths. Another influencing factor is the more rigid adherence to the state law observed at present, which requires birth and death certificates on all babies over 22 weeks' term.

TABLE III

CITY OF PHILADELPHIA

	1938	*Per cent*	*1939*	*Per cent*
Births	30,739		30,232	
Neonatal deaths	824		866	
(rate)	26.8		28.6	
Primipara	473	58.3	377	45.4
Multipara	377	41.1	433	54.6
Autopsies	360	43.9	472	44.9
Cases studied	810	98.3	828	96.5

A superficial comparison of data secured by the Neonatal Study Committee for 1938 and 1939 (Table III) is somewhat discouraging. The number of such deaths and respective rates have increased and the cases available for study have decreased, the latter fact reflecting on medical co-operation. The number coming to autopsy have increased. Attendance at our meetings has grown and the interest shown is most stimulating. It may take several years before convincing data can be obtained to show the real value of our undertaking. It is the hope of the committee that each hospital group will study their own cases in open staff meetings and fix responsibility in individual cases. Complete pediatric supervision of all newborn nurseries is another desirable goal. (No explanation is advanced for the reversal of deaths between primiparous and multiparous mothers.)

Home and Hospital Deliveries

In 1931 the ratio of hospital to home deliveries was 2 to 1, but in 1939 it had risen 6 to 1, showing a well-defined trend toward hospitalization for maternity cases. Last year there were 25,609 hospital deliveries with 742 neonatal deaths, a rate of 28.9, while 86 neonatal deaths occurred in 4344 home deliveries, a rate of 19.7 (Table IV). Of the 86 neonatal deaths taking place after home delivery, 25 babies were rushed to the hospital in extremis and expired there.

TABLE IV

	Hospital	*Rate*	*Home*	*Rate*
Deliveries	25,609		4,344	
Neonatal deaths	742	28.9	86	19.7

In 12 of the neonatal deaths in the home the babies were delivered by senior medical students. No information is available as to how many emergency maternity cases were begun in the home and terminated in the hospital. This factor undoubtedly influences the neonatal mortality rate of hospitals and of necessity reduces that of the home. In 1938 the stillbirth rate in homes and hospitals was identical.

Table V shows a study that was made of the length of life of the child in relation to the complications of pregnancy, labor, and delivery. Of the 815 neonatal deaths on which we have sufficient data (life span was not stated on 13 of the case histories), 498 had maternal complications that definitely influenced the fatal outcome. This was particularly true of the group comprising deaths in the first 24 hours after birth. The same problem of complications will hold true for stillbirths and this fact demonstrates quite clearly that a large proportion of the difficulty is prenatal and natal, i. e., obstetric in nature, and that any future improvement will probably depend on improved care during these 2 periods.

TABLE V

Deaths	*Complications of Pregnancy*	*Complications of Labor*	*Complications of Delivery*	*None*
Within 1 hour	29	63	15	23
1 hour to 23 hours	122	101	13	135
24 hours to 7 days	43	41	26	120
8 to 13 days	8	6	14	9
14 days to 1 month	9	2	6	30

Chart IV gives relative figures for 1938 and 1939 regarding the causes of death. In each year it has been shown that a similar variation occurs depending on whether autopsies have been performed or not. It is noted that the incidence of hemorrhage is about 3 times, infection 2½ times, and malformation twice as great when autopsies were carried out in neonatal deaths. Prematurity alone accounts for more than one-half of the deaths, but only about one-third when postmortem examinations are done. Asphyxial conditions were slightly lower in the 1939 study and toxemia is fast disappearing as a prominent cause of neonatal deaths. The "cause unknown" group is materially altered depending on whether autopsies take place. A small percentage (2.9) remain unknown even though every facility available to medical science has been used, but there are 6 times as many unknowns when such means are not employed.

Comments

The Philadelphia study of neonatal deaths seems to point out some definite situations in which improvement might be accomplished if we concentrated our efforts. Hemorrhage, asphyxia, infection, and prematurity are the fields of activity where present knowledge appears to indicate the possibility of successful action.

Prematurity.—The number of deaths among premature infants increased decidedly during 1939, accounting for 442 or 54.3 per cent of the 828 neonatal fatalities; 434 of these babies weighed less than 4 pounds at birth. Of the 1093 living prematures born during 1939, 40.4 per cent died within the first month of life. There can be no doubt that this is our main problem, that the cause of prematurity needs to be investigated and more intensive studies made in an attempt to prevent such births. It has been demonstrated frequently that the longer a child can be carried toward term, the greater will be its birth weight and chances for survival. It is in the group of babies with small birth weights that the mortality rate is high. Some of the factors influencing prematurity, such as toxemia of pregnancy, seem to be handled today in a much more efficient manner than 10 years ago. Dr. J. C. Hirst has shown that, in the event of multiple births, the pregnancy can be prolonged if the condition is diagnosed early and properly managed. Placental and cord conditions appear to be accidents of labor and delivery and obstetricians must be on the alert to recognize the danger, taking the appropriate steps for rapid delivery of the infant. Accidents and injuries to the mother require prompt and intelligent handling, while diseases of the mother, such as diabetes, tuberculosis, kidney and heart conditions, require careful judgment and expert advice during pregnancy.

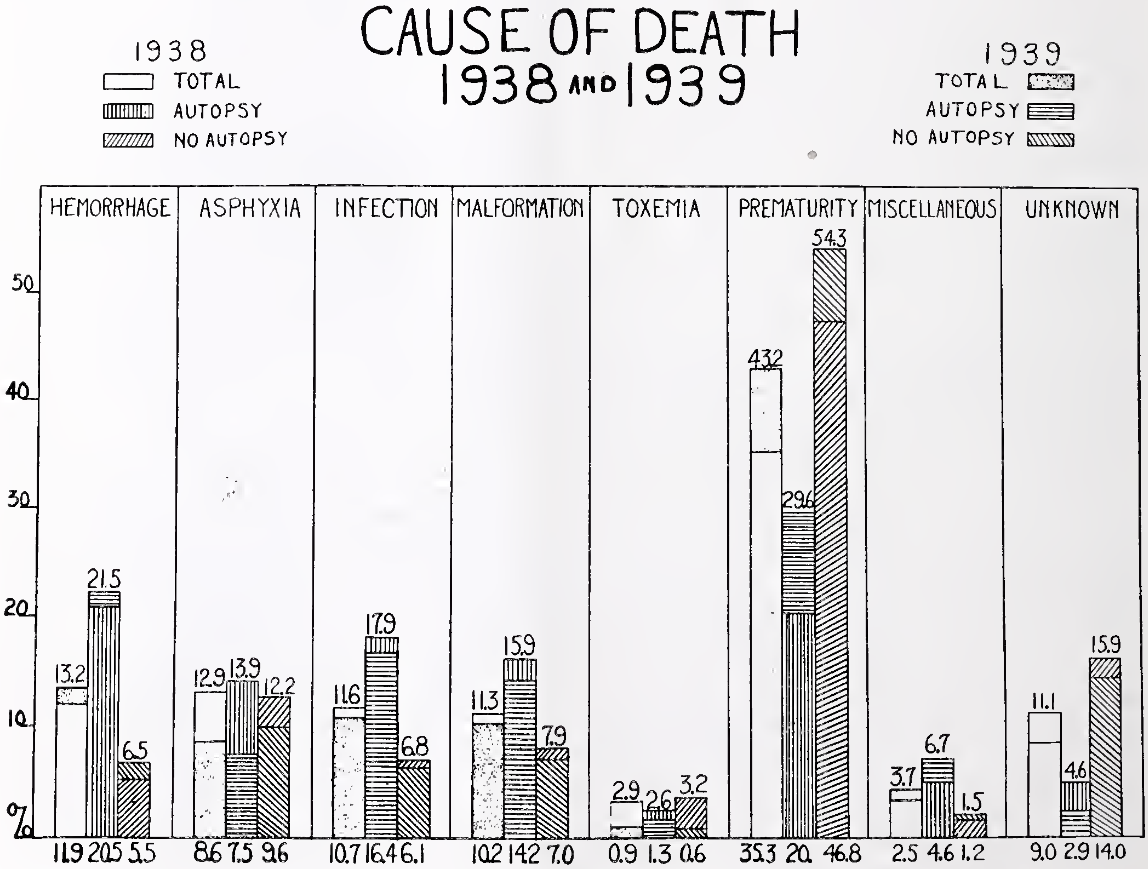

Chart 4.

Hemorrhage.—A more detailed study of the relation between hemorrhage and neonatal deaths indicates a slight increase in incidence during 1939 over 1938. When autopsies are performed, approximately 21 per cent of the deaths are due to hemorrhage, both cerebral and visceral. Recent reports by Waddell in Richmond and Eastman in Baltimore show that when vitamin K is given to the mother before delivery and to the baby for 3 days after birth, substantial reduction in fatalities due to hemorrhage may be secured. Hemorrhage from small lacerations in cerebral structures can be reduced to a minimum by the administration of vitamin K. This seems to be more effective than the old empiric method of whole blood injected into the buttocks in difficult cases, and appears to be one preventive measure that can be recommended with some hope of success. Better obstetric care during delivery must not be deprecated.

Infection.—Infection as a cause of neonatal deaths in Philadelphia showed a slight reduction in 1939 over 1938. A percentage of nearly 17 is reached in the autopsied group and nearly 11 in the total group.

Pneumonia appears to be the main infection encountered, being responsible for over 5 per cent of the total deaths in both years. Reasons for development of pneumonia in newborn babies are not always clear. A lack of careful feeding technic resulting in vomiting and insufflation of food materials undoubtedly is of importance. Insufflation of infected vaginal secretions during birth is a difficult situation to overcome and is probably due to anoxemia unrecognized by the obstetric operator. More rapid delivery is indicated in such cases. Acute respiratory infections among nursery attendants or in others who come in contact with the infant are by no means infrequent. Such persons should be excluded from the nursery and contact with the child. Carriers are more difficult to handle. At the present time it is difficult to correlate the effects of analgesics and anesthetics given to the mother and resuscitation measures in the asphyxiated infant to the presence of atelectasis and the development of pneumonia.

Septicemia among newborn babies is probably more frequent than suspected. There were 12 known cases last year, a percentage of 1.4. Entrance of infectious agents through the skin, mucous membranes, or the cord are all possible. They do not always tend to become localized. Such conditions will arise in spite of surgical technic that is now being used in the delivery of infants and aseptic technic in the care of the skin and cord.

Syphilis as a cause of death among newborn infants can be prevented by adequate treatment of the mother during pregnancy. Since marriage laws in this state now make it obligatory for the participants to undergo Wassermann examinations, more of the cases will be known and neonatal fatalities prevented. In 1939 a total of 9 infants or 1 per cent died of syphilis.

Malformation caused 10.2 per cent of the total deaths last year, but the percentage was raised to 14 per cent on the group that came to autopsy. Until the causes of malformations are determined, little can be done to prevent them. Kimball and others have suggested hypofunction of the thyroid in the early weeks of pregnancy as a probable cause of malformation of certain parts of the body, particularly the nervous system. The familial nature of the condition has been quite definitely established, but it is doubtful, in our present state of knowledge of this subject, whether it is wise to advise parents not to have any more children when such a contingency arises in their firstborn.

Birth and Death Certificates

The present method of reporting and classifying neonatal deaths is not adequate enough to give a clear picture of the situation. It has been suggested that additional information might be secured by altering the birth and death certificate forms, thereby obviating the necessity of sending out the special blanks now being used by the study committees in Philadelphia. Whether it would be possible to accomplish such alterations is a question to be considered. In view of the fact that some of the information desired would undoubtedly be confidential, a stipulation should be enforced limiting these facts to statistical purposes only. This should eliminate the possibility of the information contained in the certification or transcripts of the same being used for legal purposes.

Summary

From material now at hand, our committee feels that the time is opportune to suggest to this section that similar studies be instituted throughout our state, perhaps in each councilor district, and sponsored by the State Medical Society or the Department of Health of Pennsylvania.

Acute Diverticulitis of the Colon

ADOLPH A. WALKLING, M.D.
Philadelphia, Pa.

DIVERTICULITIS of the colon merely means an inflammation of the diverticula, either one or more. The presence of diverticula is expressed by the term diverticulosis. This condition is acquired and developed. It is agreed by almost everyone that diverticulosis and uncomplicated diverticulitis are strictly medical problems.

The highest incidence of diverticulosis is between the ages of 50 and 60, although Hartwell and Cecil report a boy of 6 years in whom diverticula of the colon were found. There is no great difference in the occurrence of diverticulitis in either sex. Diverticulitis can occur in any part of the colon. The rectum itself is not immune. Usually they are a little larger than a pea and are flask-shaped. Originally, when the diverticulum begins, a wedge-shaped piece of mucosa is forced into the opening through which vessels enter the muscular walls of the colon. Once this happens the wedge is forced further by increased internal pressure and by muscular contraction of the bowel wall. This wedge-shaped sac as it extends becomes funnel-shaped, because the sac extends after breaking through the muscle wall. They later become flask-shaped.

Initiation of secondary changes depends upon the retention of fecal matter in the colon. The more solid the fecal matter the greater the tendency to retention of material within the diverticulum. Hence, the sigmoid is the commonest site of diverticulitis. Only when chronic inflammation occurs in the neck of the sac does the latter become narrow. The long narrow communication between the bowel lumen and the diverticulum itself is probably due to inflammation and thickening of the bowel wall, so that the diverticulum resembles a grape on a stalk. There is some relation to appendiceal epiploica. This has led some people to think that diverticula are the result of the weakening of the wall by the presence of fat, but most of us believe that they occur where vessels enter the muscular coat and along the longitudinal muscle bands. The mere fact that diverticula are present means nothing except that normal eating and normal bowel habits should be encouraged. When inflammation develops, the patient still remains a medical problem, unless complications of perforation or obstruction occur. It will not be necessary to operate in every case, but these cases should all be seen by the surgeon, who is best able to assume the responsibility of deciding the point.

Some patients have mild intermittent attacks of diverticulitis for years without the occurrence of perforation or serious obstruction, while other cases are more fulminating and demand surgical procedures of varying number and degree. Lockhart-Mummery states that diverticulitis is progressive in patients not operated upon, but they can be kept free from symptoms by frequent doses of liquid petrolatum and regular eating of a nonresidue diet.

There has been a definite increase in the occurrence of diverticulitis as seen by x-ray in the past few years. Dr. Karl Kornblum, roentgenologist of Jefferson Hospital, states that he has seen 10 cases of diverticulitis in the private x-ray department in the past 2 months and in the outpatient x-ray department only 10 cases were seen in the past year, in spite of the fact that the clinic figures for total examination are 10 times those of the private side. This tremendous difference is unexplainable.

Acute Diverticulitis

This manifests itself by the presence of fever, a palpable tender mass usually in the left lower part of the abdomen associated with a period of constipation, and is due to temporary swelling and obstruction of the sigmoid. If appendicitis is ruled out, and diverticulitis is sometimes spoken of as left-sided appendicitis, operation is not indicated.

The treatment is rest in bed, morphine, plenty of fluids by venoclysis, and small amounts by mouth. Heat or cold can be applied locally and no enemas are given until the process is definitely

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Read before the Section on Surgery of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

From the Surgical B Service of the Jefferson Medical College Hospital.

subsiding. When enemas are finally given, they should be small and be given gently. Mineral oil is given by mouth, but no cathartic.

Usually patients of this type get well in a week or so. If the temperature persists or increases and the mass increases in size and becomes more tender, there is a probability that there is a walled-off abscess for which operation may be necessary. An abscess of this type occasionally perforates into the bowel and is spontaneously drained. On the other hand, if allowed to go on too long, the possibility of perforation into other organs such as the bladder must be considered. The question of whether and when to explore an acute case is a difficult one. It will likewise be difficult to determine the correct procedure after the abdomen is open.

L. P., a male Italian, age 43, was admitted to the hospital on Mar. 27, 1939, complaining of pain in the right lower quadrant which had been present for the past 24 hours. He had never had pain in the abdomen before this illness. The pain was intermittent and limited to the right lower quadrant. Four days previously, Mar. 24, the patient had a vomiting spell which was not associated with pain. On Mar. 26 he had pain accompanied by nausea. As the nausea wore off, the pain began in the right lower quadrant. He vomited once about 4 hours later. I saw him the morning of his admission with a slight amount of tenderness over the lower ascending colon at the crest of the ilium. The temperature was normal and the urine was negative. In the evening, 12 hours later, I examined him again. The tenderness was more definite and there was some right rectus spasm. The temperature was 98.6 F., pulse 120, and white blood cells 10,000. A diagnosis of perforated appendicitis was made. At operation the cecum, terminal ileum, and lower ascending colon were a mass of inflammatory tissue. The appendix was normal and was not removed. An abscess was found which was caused by a perforation of a diverticulum along the lateral side of the colon. A mushroom catheter was sutured into the colon at this point and brought out through a stab wound. Two large Penrose drains were also placed in the area. He developed a fecal fistula which healed in 8 weeks, and was discharged from the hospital on June 5.

In this type of case the question of appendicitis is always first in one's mind. If we had been certain that this was diverticulitis, the treatment would have been conservative.

When patients are operated upon in the presence of acute diverticulitis, we believe that nothing should be done to the diverticulum, unless it be perforated. In these circumstances, closure of the colon, if possible, with drainage is advocated. Usually at this time there is considerable thickening of the mesentery and adherent structures so that closure is difficult or impossible. Fecal fistulas often develop.

If it were possible to make the diagnosis of uncomplicated acute diverticulitis each time, we believe that operation should be postponed and the patient treated conservatively.

A patient, V. O., had an emergency appendectomy on Aug. 31, 1940, for acute suppurative appendicitis. The pelvic examination before operation revealed a vague mass in the pelvis. Therefore, at the time of operation I explored the pelvis. I found a lesion in the sigmoid and by enlarging the McBurney incision could see the lesion. It had the appearance of scirrhous carcinoma and I made this diagnosis. However, an x-ray examination with a barium enema made on the tenth postoperative day showed the lesion to be an acute diverticulitis. This patient had never had any bowel trouble and was not constipated. She is being treated conservatively and in 3 months another barium enema examination will be made.

Perforation

Sudden perforation occurs, but is not common —usually about 2 per cent. Slow perforation with abscess is more common and usually necessitates drainage. The question will arise as to whether drainage should be instituted or the patient allowed to wait until the abscess either drains spontaneously or can be drained through the rectum or vagina.

Patient J. C. was admitted to the hospital on Sept. 25, 1939. Two days before he had been seized with sudden sharp pain in the lower part of the abdomen followed by collapse. He was put to bed, reacted, and 2 days later I was called to see him. He had signs of peritonitis. We believed that he had a diverticulitis of the sigmoid with acute perforation. He remained in the hospital for about a month, during which time he developed an obstruction. The presence of the obstruction plus the presence of a mass in the left lower quadrant prompted us to operate upon him. An abscess was found on the left side of the pelvis which was drained. The condition of the sigmoid was such that I felt at the time that he had carcinoma and a cecostomy was also done. In 3 weeks both wounds had healed and the obstruction had been relieved. The findings following a barium enema examination made at that time were such that the opinion was given that the mass was probably inflammatory, but that malignancy could not be ruled out.

He was readmitted to the hospital 6 months later (Apr. 18, 1940) with acute obstruction. A cecostomy was again performed through the old cecostomy wound. An ileostomy was also done because of the distended loops of ileum and because of the fact that there were some collapsed loops of ileum present. The patient died the day following operation. Autopsy showed carcinoma of the rectosigmoid, diverticulitis of the sigmoid with abscess, and perforation into the ileum.

The presence of the acute diverticulitis should in no way prevent one from suspecting carcinoma. If we had been sure that carcinoma were the cause of this man's original trouble, it still would have been difficult to decide on the proper procedure.

Chronic diverticulitis may cause obstruction by the gradual building up of chronically inflamed thickened bowel which never returns to normal after attacks.

Patient I. R., a female, age 57, was admitted to Jefferson Hospital on Jan. 4, 1940, with abdominal and rectal pain of 2 weeks' duration. Two years before, May 4, 1938, she was in another hospital where she was operated upon and an abscess of the lower part of the abdomen was drained. An x-ray on May 31, 1938, showed the sigmoid to be highly spastic, its contour suggesting an inflammatory process. She was operated upon again on Aug. 1, 1938, for the same condition. On her admission to Jefferson Hospital on Jan. 4, 1940, the patient was very obese, but there was resistance and a mass in the left lower quadrant. She remained in the hospital for 27 days, having had slight fever almost continuously, and knowing her previous history she was treated conservatively. She was x-rayed on Jan. 13, 1940, and Dr. Kornblum gave the following report: "Enema entered rectum and caused moderate degree of distention of rectum and distal sigmoid and then passed by a thin stream through the remainder of sigmoid into the descending colon. The distal sigmoid colon always presented the same irregularity and showed evidence of spasticity and irritability. Appearance is characteristically that of diverticulitis." The patient was discharged to the care of her family doctor. Report of x-ray made 3 months later (Mar. 5, 1940) is essentially the same, but in addition, diverticula were seen in the descending colon.

Sooner or later we believe this woman will have to have a colostomy because of obstruction, but for the present conservative treatment is indicated. The lumen is narrowed, but with medical treatment, i. e., diet and mineral oil, it may not be evident.

In these cases the sigmoid may become adherent to the intestine, bladder, or vagina. Bladder fistula is a most distressing complication. It is always a possibility in chronic diverticulitis and is one reason why many surgeons prefer to open the abdomen and drain the infected area.

Occasionally, obstruction is produced so that colostomy is necessary. In these cases it is not always possible to be certain whether one is dealing with diverticulitis, carcinoma, or both. Even if the mass is palpated and observed, this difficulty may still arise. Furthermore, exploration is difficult in the presence of distention. It is also a well-known fact that manipulation of the mass may produce an acute peritonitis. In the presence of obstruction, whether it be due to diverticulitis or carcinoma, we believe that a colostomy is indicated. Putting the bowel at rest will cause the acute inflammatory process to subside. The chronic inflammatory tissue will not disappear and it may be impossible to close the colostomy later. These cases can be followed by repeated barium enema examination.

Resection may be done (1) because of the fact that there is always the possibility of carcinoma being present, (2) if fistulas have formed, (3) because of the possibility of perforation during subsequent acute attacks, and (4) because of recurring obstruction.

Before resection is attempted, a colostomy is done. The descending colostomy is unsatisfactory because it is too near the contemplated operative wound. The transverse colostomy or ascending colostomy are satisfactory in completely diverting the fecal current. The cecostomy is not satisfactory because the entire fecal current is not interrupted, although one of our cases had a cecostomy and was relieved of his acute symptoms.

Conclusions

1. Acute diverticulitis is a medical problem until complications arise. Most cases recover without operation and should be allowed to do so, but not without the opinion of a surgeon, as he is best able to decide the proper procedure in acute abdominal inflammation.

2. Diverticulitis must be considered in all acute lower abdominal conditions in patients over 40.

3. Surgical complications when they arise should be treated in the simplest possible manner, and when resection is necessary, we believe this should be preceded by a colostomy.

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ABSTRACT OF DISCUSSION

Enoch H. Adams (Bellefonte): This most interesting subject is one that is often neglected and not thought of by the general public until complications arise. There are several points in diagnosis which make it difficult at times. Recently we had a woman about 70 years of age with intestinal obstruction. She was markedly distended, and in addition she had an inguinal hernia. What she really had was diverticulitis and intestinal obstruction.

After the diagnosis is made, the problem to decide is whether to operate immediately or wait and see if the condition will respond to treatment. I am very much in favor of conservative treatment in these cases. They occur more or less in patients who are poor risks and in whom operation is a serious matter. Many of the real diverticulitis cases do clear up. However, one may have to wait to see whether they will remain cleared up or whether a subsequent operation will be necessary. The x-ray diagnosis is really what we have to depend upon for the answer to this question.

I have seen peritonitis spread by manipulation. Therefore, I do not feel that it is safe to bring the intestines out as in the Mikulicz operation where there is a great deal of manipulation. It is my impression that many elderly people who do not even reach the hospital have symptoms of diverticulitis, indicated by constipation and often obstruction. Many times it clears up, but I do believe that many of these cases are really diverticulitis cases and are not suspected before medical treatment is begun.

Fractional Gastric Analysis in the Newborn

Preliminary Report

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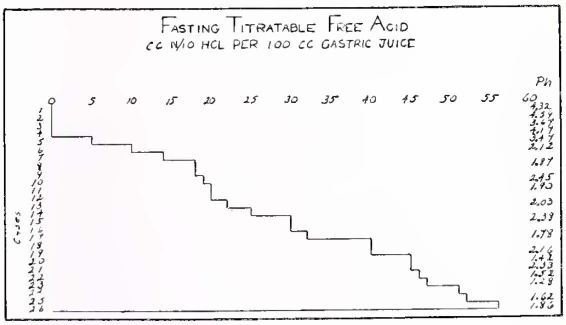
RECENT advances made in the study of gastric secretion in the adult have not been applied to the study of gastric secretion in the newborn. This may be due to the fact that the newborn infant often presents certain problems referable to delivery to deter one from disturbing it for experimental studies. There is an increasing disinclination among mothers in all social strata to suckle their newborn infants, so that artificial feeding is more prevalent. To overcome weight loss, rightly or wrongly, there is also an increasing tendency for prelacteal feeding.

The important rôle of gastric secretion in the proper digestion of food and the possible relationship to the hematologic studies of the infant stimulated a study in gastric secretion along lines recently reported in adults. There have been relatively few studies of gastric secretion in the unfed, newborn infant. A variety of technics and test meals have been used so that results have not been comparable. To overcome the latter, histamine has been employed as a gastric stimulant and a few articles have been concerned with the dosage of this chemical material. It has been only in recent years that the quantitative results of the studies of gastric secretions in the newborn could be considered reliable. In some of the more recent work there was no provision for the estimation of the dilution and the chemical contents of the test meal. In other studies, in which the quantitative results were seemingly reliable, there were not sufficient concomitant studies of other factors in the gastric juice besides free acid, total acid, and *p*H.

In a few studies substances have been incorporated in the test meal to study its dilution in the infant's stomach, but with our present knowledge these substances may be considered as being unsuited for the purpose. Any extraction from the stomach may contain, besides gastric secretion, the test meal, saliva, and duodenal contents. Analysis of such extractions may be deemed fallacious, as it has been shown that in any particular extraction the test meal may represent from zero to 80 per cent of the gastric content. This has led to the incorporation of a substance, in known concentration, which could be used to determine quantitatively the proportionate amount of gastric secretion and test meal in each extraction. Such a substance has been termed a dilution indicator and is the means by which we can determine the corrected values for the acid and chloride content of the gastric secretion instead of the usually reported acid and chloride concentrations. Phenol red (phenolsulfonphthalein) was used as a dilution indicator, as it has been shown by others to meet the requirements of such a substance. Hollander and Glickman have recently demonstrated that mathematical errors are inherent in the analysis, and mathematical formulas have been devised to correct such errors. Determinations by the photo-electric colorimeter obviate the necessity for such complicated formulas.



Graph 1.

In the studies contained in this report, barley gruel, dried milk, and Liebig's extract were tried as test meals. Two per cent Liebig's extract was chosen because it eliminated the faults of histamine as a stimulant. Histamine acts selectively on cells which secrete water, hydrochloric acid, and other inorganic constituents without affecting enzyme secretions, and it is not con-

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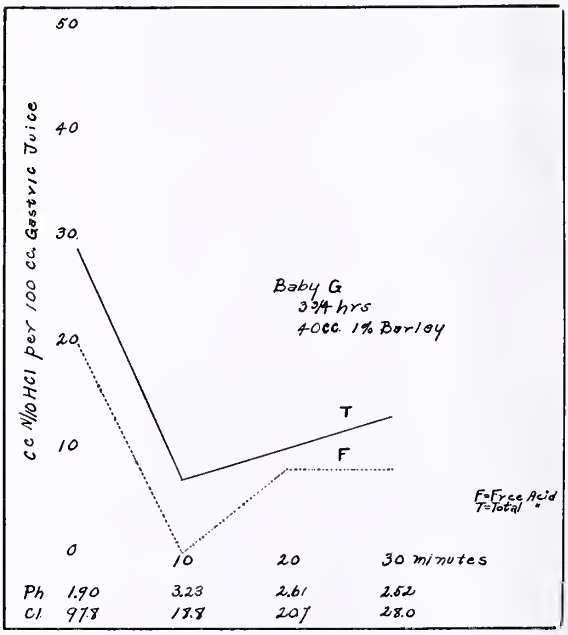
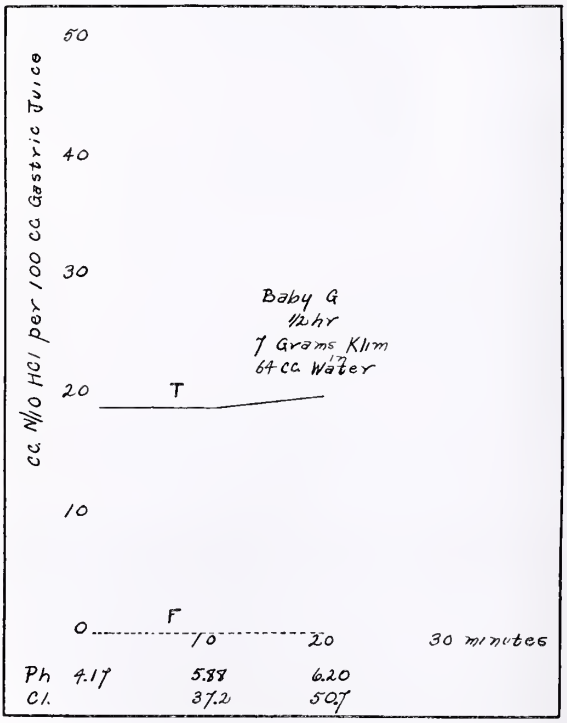
Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.
From the Nursery of the Obstetrical Division of the Philadelphia General Hospital.



Graph 2.

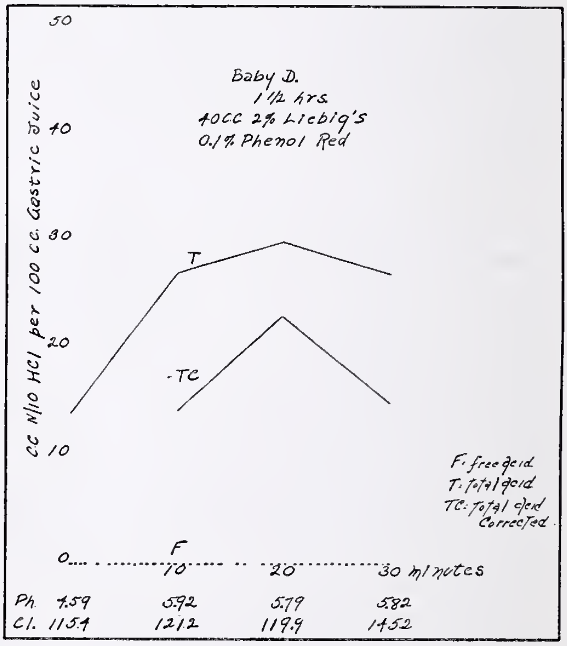
trolled by the mechanism of acid inhibition because of its intense effect. It was considered inadvisable to employ such a potent chemical in experimental studies in the newborn. Milk was discarded as a test meal because of its high buffering effects. Barley gruel as a test meal has the faults of the ordinary starchy test meal; namely, its low secretagogic effect, admixture of gastric secretion with fluid of the test meal, and the impossibility of ascertaining the relative amounts of acid and nonacid in the stomach during the test. Seven per cent alcohol with one-tenth per cent phenolphthalein in 95 per cent alcohol has been used as a test meal in some experimental studies. It was not used in this experiment, as alcohol was not considered a physiologic gastric stimulant in the newborn infant and phenolphthalein has been shown to be inferior to phenolsulfonphthalein as a dilution indicator.



Graph 3.

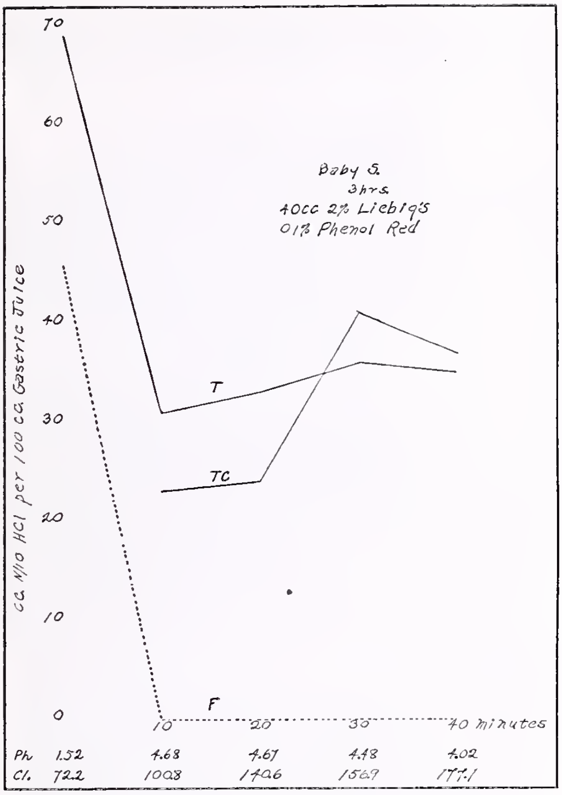
Comments

In this preliminary report no mention is being made of the technic of extraction and methods of analysis, as this will be discussed in a later article. This study involved 36 infants on the newborn service of the Philadelphia General Hospital ranging in age from one-half hour to 14 hours. None of these infants had ever received any water or milk, with one exception in which a half ounce of water had been given 10 minutes before a fasting extraction.



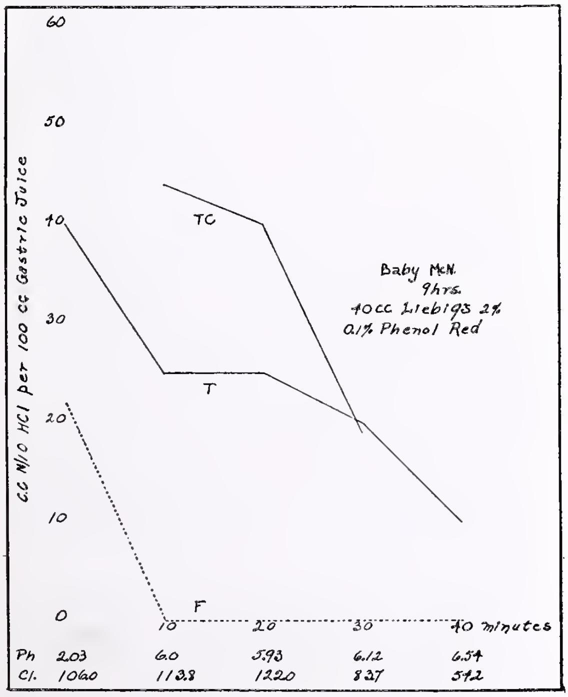
Graph 4.

The quantity of fasting free hydrochloric acid in the gastric juice of the unfed, newborn infant shows a high concentration (Graph 1). In over 50 per cent of the infants there was more than 20 c.c. of one-tenth normal hydrochloric acid in each 100 c.c. of gastric juice in the fasting extractions. The fasting free hydrochloric acid ranged from zero to 56 clinical units. The total acid in the fasting specimens ranged from 11 to 84 clinical units; the *p*H from 1.28 to 4.59. No free acid was recovered in the fasting state in 4 cases.

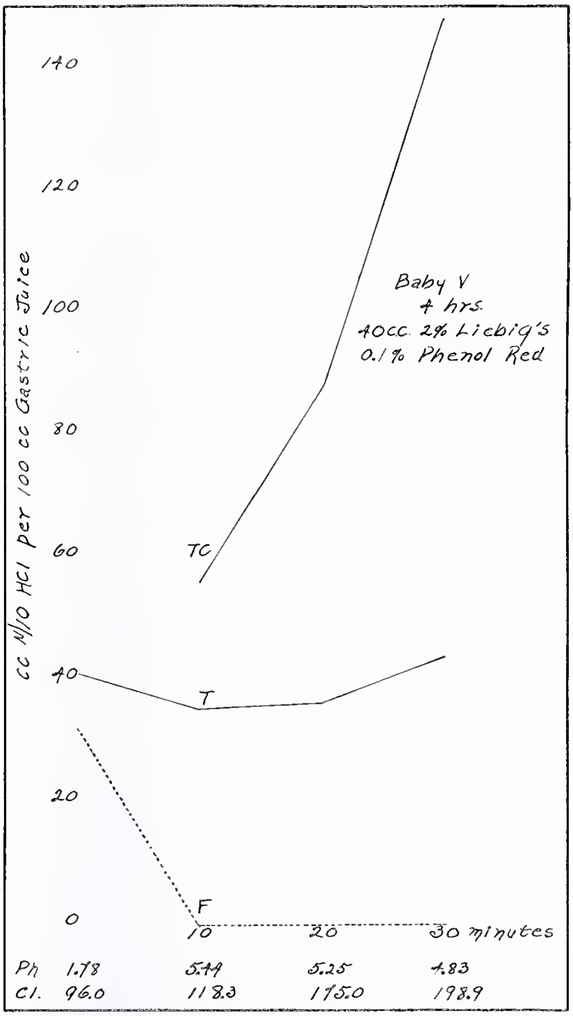


Graph 5.

Barley gruel (Graphs 2 and 3) and dry milk (Graphs 4 and 5) as test meals proved to be poor stimulants for the secretion of gastric juice. After the Liebig's test meal there was invariably no free hydrochloric acid recovered after a fasting extraction, with one exception where free hydrochloric acid could be determined after 40 minutes. Whenever the gastric contents could not be aspirated, gastric lavage showed the return of fairly clear fluid. The total titratable acidity was high after the Liebig's test meal. The absence of titratable free acid 10 minutes after the administration of the Liebig's meal with an increase in the total acidity would indicate that the protein of the Liebig's meal combined with the hydrochloric acid. The relatively high readings for total acidity would indicate that free acid is being secreted, but the buffer action of the test meal makes titration impossible. In vitro 40 c.c. of 2 per cent Liebig's combines with 17 c.c. of one-tenth normal hydrochloric acid.



Graph 6.



Graph 7.

Although many workers consider Liebig's a satisfactory test meal for the study of gastric secretion in adults, it is apparently not suited for the study of free hydrochloric acid in the newborn infant. The high free acid in the fasting contents in the newborn infant may represent an accumulation occurring in utero through stimulation by a substance in the mother's blood stream. This may hypothetically explain the action of an intrinsic factor liberated in the gastric juice of the newborn infant which may play a part in bringing the infant's erythropoietic system to a more mature level. The graphs demonstrate the general pattern of the types of curves obtained in the study. The importance of gastric acidity in the metabolism of calcium and iron is well known and the absence of free hydrochloric acid in the fasting extraction in a newborn infant may be significant.

Conclusions

1. The stomach of the newborn infant shows a high secretory capacity.
2. Some infants show hypersecretion as judged by adult standards.
3. An appreciable number of infants in this study showed a lack of free hydrochloric acid and this may be a significant factor in the development of anemia and rickets in those infants who are anemic and develop rickets in spite of an adequate intake of iron, calcium, and vitamin D.
4. Milk and barley gruel are poor stimulants for studies in gastric secretion. Liebig's extract is a satisfactory stimulant of gastric secretion, but because of its buffering action is not suitable for the study of free hydrochloric acid in the newborn infant.

ABSTRACT OF DISCUSSION

Joseph A. Gilmartin (Pittsburgh): Several years ago I attended a conference on secondary anemia in children, and at that time someone stated that a lot of work had been done in adults showing the relationship between gastric acidity and secondary anemia, but nothing was done about infants. For that reason I think Dr. Ritter has made a very valuable contribution to the literature.

It would be interesting to know what happened later to the 4 babies in whom no free acid was found in a fasting state. Did they later develop anemia or rickets? Were they able to digest proteins satisfactorily?

Since we already know that the acidity of the gastric juices favors the absorption of iron and calcium, perhaps we may apply this technic clinically in the investigation of the severe secondary anemias sometimes seen in babies who are on a proper dietary régime.

We shall be interested in knowing Dr. Ritter's methods of extraction and analysis of the gastric contents of babies.

Dr. Ritter (in closing): As far as further follow-up studies are concerned, we intend to try other test meals. It is almost impossible to follow up the cases.

The 2 per cent Liebig's extract is a 2 per cent meat extract of fairly well-known composition, although we determine the chloride content of each test.

The method of extraction was by a rubber catheter through the nose. There was no difficulty in extracting the gastric contents.

LEARNING FROM BOOKS

H. Hudson often declares that "the man who confesses he has no knowledge of books tells us that the blinds are close drawn on some of the windows of his soul." To make yourself more interesting to yourself as well as to others, you have to learn more. You have to get under the surface of things—and one certain way is to read and study good books. Naturally, good books are those that will increase your store of knowledge, broaden your viewpoint, and make you a more interesting, more tolerant, and a nobler person in some degree. Sir Francis Bacon said that some books are to be tasted, others to be swallowed, and a few chewed and digested.

If you want to take your rightful place in business and social life, you must be a broad-gauged man with a well-stored mind—and that calls for a cultural background. Wishing will never get you anywhere. Start *getting* and you will find that knowledge gradually unleashes the imprisoned power in you. This power, which has few limitations, is there to be used. The ability to talk confidently and intelligently comes from acquaintance with the great minds of yesterday and today.

Any librarian will be glad to assist you in preparing a list of desirable books. Such lists are of secondary importance to the urge, the determination, the deep desire to learn. Such mental expansion will lead to the proper road.

Some believe that the measure of a man is in proportion to the size of his vocabulary. What is probably true is that the pleasure we get out of reading is largely in proportion to the degree of our understanding of words. The average vocabulary is estimated to be between 2000 and 3000 words. Shakespeare used over 20,000, while Woodrow Wilson has been credited with about 40,000.

Too many conversations abound in trite remarks, banal expressions, and uninteresting and superficial opinions. The average man does not know the meaning of a great many of the words he uses—and often doesn't care whether those he does use convey the proper thought or meaning. He covers up his limitations with "You know what I mean!" You must learn the proper use of words before you can translate your ideas intelligently. Too few are able to do it these days—and too many are either ignorant of or unconcerned about it. Words are really God's greatest boon to mankind. Only with them can real co-operation between minds take place. Do more than merely think about studying and collecting words; become a Wordologist.—*The York Trade Compositor.*

For localized discussion of problems in national defense preparedness and hospital intern service, see page 1328.

THE PENNSYLVANIA MEDICAL JOURNAL

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EDITORIALS

MISSING THE POINT

Who better than an editor might be expected to discuss from a background of experience the currently trenchant topic of points missed? Points developed in labored editorial writings and completely overlooked by readers are a common editorial experience, but the point missed that is stressed herewith is so commonly missed today as to originate a problem of deep concern in county, state, and nation.

The missed point over which we labor in this writing is the apparent nation-wide failure of our citizenry to sense the measureless yet dangerous implications that lie between the choice of "give or get" in each citizen's personal thinking and actions toward preparedness for national defense.

How many persons in any given community by their actions indicate that they are aware or even care in these times of threatening emergency that national unity and security may be imperiled by organized selfishness? How many doctors of medicine now in the nation's service are enjoying any sense of future security from private practice on account of the concerted protective effort of their fellow practitioners who remain at home? How many young men from other walks of life who are sacrificing earned income and advancement in private industry while in the nation's service, look with confidence into the future, while various governments—city, county, state, and national—permit those who remain at home to wreck through greed, by means of modernized organizational law-breaking activities, the best-laid industrial plans for national defense?

We leave to those responsible for government, and for the conduct of industry and of organized labor the vital choice of grasping or *missing the point* and the decision between giving loyally to the nation or selfishly seeking to get for themselves what they can during the nation's present time of need.

To the members of the medical profession of Pennsylvania we look with confidence, through the adoption of policies emphasized in this issue of the Journal, for adequate professional service to all those who need and seek it and for fair consideration of the home interests of the many physicians herein named who are now in military service.

BIRTH MARKS

The old belief that angiomas (birth marks) need not be treated during infancy is no longer acceptable in the light of present-day knowledge.

On the contrary, most authorities agree that the best time to treat these lesions is as soon as the diagnosis is made. Treat the infant during the first 6 weeks of life if at all possible. Indeed, it may be considered axiomatic that the earlier in life treatment is instituted the more satisfactory the cosmetic result. The physician is urged not to tell the family to wait for treatment until the child gets older.

As a rule, vascular nevi grow slowly during infancy and persist unchanged throughout adult life. Occasionally these lesions undergo spontaneous involution, leaving delicate atrophic scars where once red skin blemishes existed.

Not infrequently, however, angiomas assume active growth characteristics and become sizable tumors within a few weeks or months. The prevention of this unbridled growth may be considered the physician's chief responsibility to patients with angiomas.

Equally important is the problem of restoring normal skin coloring to pigmented areas. Whereas many angiomas blanch spontaneously, others continue to become more deeply discolored unless treated properly.

Generally, the amount of blanching produced by diascopic pressure serves as a fair index to the degree of depigmentation one may expect following treatment. If the discoloration is entirely removed by pressure, one may expect an excellent cosmetic result. If, however, the blemish persists during diascopic pressure, the ultimate result is usually less favorable.

Unfortunately, not all vascular nevi respond equally to treatment. The response is brilliant in some, negligible in others. It behooves the physician, therefore, to familiarize himself with the physical characteristics of all nevi so that he may recognize those which may be helped by early treatment.

In the early days of roentgen and radium therapy, disturbance in growth was produced by over-irradiation of adjacent tissues such as bone. Today it is possible to plan treatments so that the radiation is confined largely to the involved area.

The following types of vascular nevi are recognized: (1) strawberry mark, (2) cavernous angioma, (3) port-wine stain, (4) telangiectasis, and (5) lymphangioma.

1. Strawberry mark (angioma simplex, nevus vasculosis).—Strawberry marks are flat or slightly elevated lesions of the skin which vary in color from light pink to purple and which are completely blanched by diascopic pressure. They appear at birth or soon thereafter. They may be single or multiple. When treated early, excellent cosmetic results may be obtained.

In treating strawberry marks, or any nevus, patience both on the part of the patient and the physician, is of paramount importance. It takes months and sometimes years to treat an angioma properly.

Treatment should not be given at too short intervals lest lesions be overtreated. Indeed, overtreated lesions may be just as disfiguring as those that have been undertreated. Once treatment has been started and growth ceases, nature assumes a very important rôle, which must be recognized in planning the care of angiomas. As a rule, treatments should not be given at intervals of less than 6 to 8 weeks. This allows enough time between applications to observe the continued effects of nature plus the therapeutic agent. Later, when it becomes evident that the patient has had almost all the treatment necessary, the interval between treatments may be lengthened to 3 to 4 months.

Strawberry marks are very susceptible to radiation therapy. Roentgen rays generated at low voltages and delivered at short target skin distances are ideal for this type of lesion. Unless deep cavernous elements are associated with the strawberry mark, there seems little reason for using interstitial radium or radon.

2. Cavernous angioma (angioma cavernosum).—These angiomas may involve (a) only the superficial layers of the skin, (b) the deeper layers of the skin and subcutaneous tissues, or (c) both. When only the superficial layers of the skin are involved, the lesions are slightly raised above skin level. The covering skin is exceedingly thin, allowing the cavernous red-violet vessels to be seen through it.

Cavernous angiomas situated below the cutis are usually thicker and more lobulated than the superficial lesions. Usually they extend above the skin level in a dome-like manner. They vary in color from deep blue-violet to the color of normal skin depending upon the thickness of the skin covering. The angioma may consist of many small vessels which feel like a bunch of worms or it may be composed of a few large sinuses. Both types are compressible, the latter more so than the former. In some instances, phleboliths may be felt within the soft tissue mass.

Occasionally cavernous angiomas involve both the superficial and deeper structures of the skin. In such instances the subcutaneous or submucous portion is usually larger than the cutaneous lesion. It is frequently difficult to differentiate between this type of cavernous angioma and nevi which are a combination of strawberry mark and cavernous angioma. Whereas strawberry marks are usually present at birth, cavernous hemangiomas are not generally observed until the infant becomes a few weeks or months of age. Both lesions blanch equally well on diascopic pressure.

Radiation therapy, by low voltage x-rays, produces excellent results in cavernous angiomas.

3. Port-wine stain (nevus flammeus, capillary nevus).—These lesions are usually seen on the face and neck, less frequently on the trunk and limbs. The surface may be smooth or dotted with small nodular or wart-like elevations. They vary in color from red to violet, the color becoming more livid on crying, or exposure to cold. With diascopic pressure much of the discoloration is removed except for a slight reddish-brown stain.

The general impression exists that there is little use treating port-wine stains. This pessimism is not entirely justified, especially when lesions are treated early in infancy. Whereas the reddish-brown stain seen on diascopic pressure persists in spite of treatment, the vascular elements do respond and some blanching is frequently effected.

There is reason to believe that the cosmetic results produced by x-rays after the method of Chaoul are superior to those produced by radium and carbon dioxide snow. In treating these lesions, as in other nevi, small doses of low voltage x-rays distributed over a long period of time produce the most satisfactory results. The secret of improved results depends largely upon beginning the treatment of the infant during the first few weeks of life.

4. Telangiectasis (spider nevus, nevus araneus, stellar nevus).—Telangiectases are characterized by localized dilatations of pre-existing blood vessels, usually associated with the formation of new blood vessels. Barely perceptible at birth, telangiectases gradually make their appearance as pinhead-sized elevated red spots. Later, a fine network of delicate blood vessels may be seen radiating in spoke-like fashion from the centrally placed red spot. Pin-point pressure over the vascular punctum produces blanching of the entire area.

Electrolysis is the treatment of choice in these lesions. The electrolytic needle should be inserted into the central red spot. Enough current should then be passed through the needle to coagulate the blood vessel and blanch the area. Destruction of this central point may eradicate the entire lesion. When multiple stellate lesions exist, each vascular punctum must be similarly electrodesiccated.

5. Lymphangioma.—These lesions may be divided into 2 groups—the simple and cavernous lymphangiomas. Both types are characterized by groups of deep-seated dilated and cystic lymph vessels.

Simple lymphangiomas are located in the skin or mucous membrane. They resemble the spawn of frogs because of the appearance of numerous millet-sized shiny vesicles within the soft tissue swelling. Occasionally present at birth, they usually appear during the first months of life or in later childhood.

Cavernous lymphangiomas are usually more deeply situated. As a rule, the overlying skin surface is of normal color and raised in dome-like fashion. They are found at birth or soon thereafter and increase slowly in size.

Lymphangiomas as a group are less amenable to radiation therapy than other vascular nevi. Occasionally, they prove radiosensitive. More commonly they exhibit little improvement even after large doses of radiation. Usually better results may be obtained by excising or electrodesiccating the lymphangiomatous area. Before resorting to surgical procedures, however, it would seem advisable to test the radiosensitivity of the lesion by using small doses of radiation. In this manner the more sensitive lesions may be cared for without surgery.

In closing these comments, I would like to emphasize again the extreme importance of treating all angiomatous lesions in infancy if possible. Lesions that respond readily at 6 weeks are more resistant at 2 years of age.

E. P. P.

GRASPING THE POINT

"In a democracy government is ourselves, and if we fail to get good government the fault is chiefly our own."—See page 1239.

SECOND COUNCILOR DISTRICT COMMISSION MEETING

On May 28, 1941, the commission met at the Valley Forge Hotel, Norristown. Lunch was served in the ballroom at 12 M.

At 1:10 p.m., Dr. Edgar S. Buyers, councilor and trustee of the Second Councilor District, called the meeting to order. He welcomed the 31 members of the district who had answered his call to hear about vexing problems confronting the State Society and announced that every county society in the district with a total of 800 members was represented.

In order that this meeting might not be confused with the councilor district meeting held in September, he explained the difference. In the commission meeting the component county societies are represented by their officers and chairmen of some of the committees; at the councilor district meeting all the members of the component county societies come and meet with the woman's auxiliaries. At the commission meeting, expenses are met by the State Society.

Councilor Buyers recounted many of the activities of the Board of Trustees of The Medical Society of the State of Pennsylvania for the past few months. Certain vital problems demand immediate discussion: (1) medical preparedness; (2) proposed amendments to Pennsylvania's Medical Practice Act.

In presenting Dr. Francis F. Borzell, president of the State Medical Society and a member of its Committee on Medical Preparedness, Councilor Buyers described him as an active president, always willing and able to meet all demands of the office.

President Borzell

In the present national defense program the medical profession is of more importance than it was in World War I, and we must bend every effort toward maintaining that status. To make all this work harmonious, everyone must co-operate with the county and state medical societies.

Governor James insists that all appointees to Selective Service boards must be nominated first by the State Medical Society; likewise, all appointees to the induction and medical advisory boards must be approved by the State Medical Society. The War Department and the Surgeon General also expect wholehearted co-operation and support in the operation of the Selective Service.

Draft Board Problems.—The terms "Draft Board" and "Selective Service Board" are synonymous, the government preferring Selective Service because it is a more dignified term.

Physicians' Problems.—The county society assumes the responsibility of providing the best in medical examinations when it originally selects the examiners.

President Borzell cited defects in the methods of induction and quoted the director of the State Selective Service Board, William Mather Lewis, as thoroughly in sympathy with all efforts to correct false impressions growing out of confused physical findings. The National Selective Service and the Army have been trying to correct these glaring defects of induction, and have chosen the State of Pennsylvania for an experiment. They propose that when the registrants are examined and passed by the induction board that they be returned to their homes at the expense of the Selective Service Board to await further orders; they are to be given 10 to 20 days to adjust their business affairs before induction into the service. This improvement has necessitated the creation of 3 more induction boards for Pennsylvania—at Scranton, Williamsport, and Erie.

County Medical Society Problems.—Statistics show that approximately 30 per cent of the examined men are rejected as physically unfit. The standards of fitness as prescribed by the Selective Service Manual are quite high, the War Department insisting that a repetition of the results of 1917 must not happen because inducted defectives now cost the government many millions of dollars annually. A careful analysis of these statistics shows that most of these defects are not incapacitating, they do not interfere with the normal activities of these individuals, and less than 25 per cent of those rejected need rehabilitation.

What can we do about this? As always, we will assume the responsibility for rehabilitation. We will guide and direct such activities, but we will watch the extramedical groups for perverse activities, disguised movements, and premature steps. One group has already approached this problem by setting up machinery for what it calls "prehabilitation."

All figures and data in the statistics on rejections must be interpreted in terms of medical service in order that the interpretation be correct. Recently, Director Lewis declared: "All records of the physical condition of the draftee, all claims for dependency, and all records of previous military service must be kept confidential. The draftee is entitled to know everything pertaining to his record; no individual or agency shall have access to them; only a court can subpoena the records."

"I believe," said President Borzell, *"that it is incumbent on every county society to take a leading interest in conserving the health of the draftee, to get corrective treatment for him, to see that the private practice of medicine is preserved, and to prevent government clinics handling what properly belongs locally. On the other hand, the man needing corrective treatment should have something to say about it. Nonmedical agencies are not slow to recognize the public needs created by rejections and rehabilitation problems; they seize what does not belong to them because we are prone to be slow in realizing that these are all our responsibilities."*

Our State Department of Health has assumed responsibility for certain rejectees suffering from tuberculosis, venereal diseases, and mental diseases. Drs. Shaw and Reynolds insist that these cases be turned over to the Department of Health, but if able to pay and can be treated adequately at home, they contend that such should not be placed in state institutions.

Lay organizations demand a share in rehabilitating these men; they insist that this is their project and they do their utmost to embarrass the medical profession. We must set up the machinery to handle these rejections, for only we can advise what should be done. For the sake of the public interest that organized medicine stands for, the family physician must accept his responsibility when rejected selectees are referred back to him for advice and correction. The records of induction boards must be made accessible to him.

In order that all physicians might acquaint themselves with the army requirements in physical standards and causes for rejection, it is suggested that physicians study the Manual on Selective Service Examinations. They might also encourage registrants to undergo examinations before being called by the draft board in the hope of discovering and correcting remediable defects—a so-called prehabilitation program. A program like this will save physicians and registrants many embarrassments, show the public our interest in the preparedness program, and forestall propaganda and work of self-constituted rehabilitation agencies.

Each county medical society must assume responsibility for this health preparedness program; it must watch the trends and tendencies and do that which is best for the future of local communities and of those who serve their health interests.

Councilor Buyers: Figures of the Selective Service boards show that about 85 per cent of the registrants are weeded out for some reason or other before being called for examination, which action leaves only 15 per cent to be examined. Of those examined, 4 or 5 out of every 10 are rejected. In some way, records that are supposed to be confidential become publicized, newspapers get the names of those rejected and their defects, and the draftee must suffer humiliation and embarrassment. There should be some way to stop this practice.

Philip J. Lukens (Montgomery County): Every physician should acquaint himself with Volume VI—Physical Standards of Selective Service Regulations. It is a revelation to learn how many registrants have physical disabilities. This selective work is an education to the doctor; I am learning more and more. To prepare the doctor for the prehabilitation program, I would urge that each doctor procure a copy of the manual and study it. (Address P. O. Box 92, Harrisburg, Pa.)

Robert T. Devereux (Chester County): The Chester County Medical Society is having a meeting of Selective Service Board examiners on June 17 for the purpose of clarification. We want to present our individual problems and have them answered intelligently.

John J. Sweeney (Delaware County): One difficulty is getting local boards to learn the requirements of the induction boards, which reject many registrants because of the fear that some might later become governmental charges.

Augustus H. Clagett (Delaware County): The age limit of registrants is too high; at 36 one would expect to find many defects. We find that most defectives have been under the care of their family physicians. Why not refer all these defectives back to them? Most defectives rejected by the army are able to work at civilian tasks.

Franklin E. Chamberlin (Delaware County): The men we examine are the average residue after voluntary enlistments and deferments for defense industries. We should expect many rejects. Defective teeth are due to physiologic and not to pathologic reasons. Family customs forbid attempts at dental correction; extraction is the only dental work they consider.

Henry D. Reed (Montgomery County): In Pottstown newspaper publicity on those rejected played up all known defects. Doctors were scored and the defects were thrown at our doors. These unwarranted criticisms at first gave offense to the examiners. The position and responsibility of the county medical society in these problems is not overdrawn. We should follow closely President Borzell's suggestions.

Joseph Scattergood, Jr. (Chester County): If the records of these men are to be confidential, how is the family physician to have access to the findings of the induction boards?

President Borzell: As a public health measure, the Selective Service Board gave the State Department of Health authority to examine the records of the rejected men.

Kenneth Scott (Chester County): Can any authority force the correction of the defects?

President Borzell: No.

Clifford H. Arnold, Montgomery County, spoke on "The Necessity of Community Preparedness."

President Borzell: I did not touch on the State Defense Council authorized by Governor James. This was originally the idea of a lay group with no medical men on the committee. Recently, that setup has been changed and the Defense Council now calls for a Medical Advisory Council. The program calls for committees in the several counties to be organized for just such catastrophes as Dr. Arnold speaks of. We hope to maintain professional control of all health preparedness.

Councilor Buyers: We should not be discouraged at the number of rejects. Physicians know how difficult it is to get at the root and family history of certain diseases. The induction board has more time and better facilities for ferreting out malingerers, and here is where information and advice from the family physician should be of great help.

Proposed Medical Legislation

C. L. Palmer (chairman of Committee on Public Health Legislation): There is so much to be said about the proposed amendments to the Medical Practice Act that I would rather answer questions than talk. This is a confused situation, but I shall briefly attempt to unravel the scramble of these amendments.

The national defense program has and will continue annually to take from private practice several thousand doctors for unknown periods of service. Many states require internship as a prerequisite to licensure. The intern shortage is nation-wide; if you can't get interns in one state, you can't get them in another because the army will take the graduates not entering hospitals. Some Pennsylvania hospitals can get no interns and members of the staffs must take turns sleeping in the hospitals to care for emergencies.

In Pennsylvania 100 or more hospitals are approved by the state licensing board for intern training; nearly 200 are not approved, but are under the control of the State Department of Welfare. The American Medical Association, the American College of Surgeons, and the Pennsylvania Board of Medical Education and Licensure establish the requirements for intern training. To be thus approved, a hospital must have a minimum of 100 beds for diversity of clinical material, and have at least 25 beds per intern, also completely equipped maternity, laboratory, and anesthesia services for the training of interns. Unapproved hospitals do not have these facilities, yet many of them offer good service to their communities.

Regarding the existing Medical Practice Act, an opinion has been rendered by the Attorney General and accepted by the Department of Justice as follows: *"No person may serve in any hospital without a license* *except a student intern under the supervision of the staff. Beyond the period of student internship, he must be licensed in Pennsylvania. A postgraduate student, licensed in another state, cannot take a residency in a hospital in Pennsylvania without a Pennsylvania license."*

Also, under the present Medical Practice Act, a student intern cannot serve in a hospital during the waiting period between the end of his intern year and the time that he is examined by the Board of Medical Education and Licensure. Section VII of the act provides that a "student intern" in any legally incorporated and approved hospital is exempt from licensure until the end of the intern year.

The management of many hospitals object to the time limit, although the act definitely calls internship the fifth year in medicine. The term "student intern" is the crux of the problem. It has been defined by the Attorney General and the Department of Justice; on this opinion the Board of Medical Education and Licensure acts. If hospitals think they can accept any other person and call him a "student intern," it may become necessary to invoke the decision of the courts.

Postgraduate schools and hospitals approved for specialty training by the various American specialty boards earnestly desire temporary state licensure for those in training.

We are committed on these two proposed amendments, but the opinion has been given by the Department of Justice, not released, that no one can serve in a hospital without licensure except a "student intern." Attorneys for hospitals have put their own interpretation on "student intern." On their opinion hospitals would have us throw everything wide open for as long as they want.

By the present act we do not allow Pennsylvania to do what we would permit hospitals in North Carolina to do. But for this act there would be slight incentive for hospitals to meet the approved status. We have drafted amendments to take care of these so-called defects in the act; the re-enactments simply clarify the question of "student intern" and permit the granting of temporary certificates to students pursuing specialty courses—those already licensed in some state or Canada. The Department of Welfare, which supervises unapproved hospitals, holds them to the Attorney General's opinion, and holds up their appropriations if they do not conform to the act. As interpreted, this law is a stumbling block.

In the proposed amendments to the Medical Practice Act, the term "student intern" means *an individual primarily serving as intern in an approved hospital as defined by the act, who will be permitted to serve in the hospital pending the granting of his license—provided he takes the next examination following the conclusion of his internship.* We have made minor changes in the act, deleted dead wood, and have provided for temporary licensure to bona fide graduate students. Many unapproved hospitals will accept any intern and want no temporary licenses, and for economic reasons wish to keep the intern as long as they can; they want a free, wide-open state to keep the intern at their pleasure even when it is known that he cannot pass the Pennsylvania Board of Medical Education and Licensure.

Hospital resistance has now thrown the status of "student intern" back to where it has been for several years.

Dr. Sweeney: Hospital managers are taking advantage of other legal interpretations of "student intern" and are employing interns indefinitely.

Dr. Palmer: By Act 230 the Welfare Department can close such hospitals by holding up their state appropriations. Hospitals want "junior interns" restored also for economic reasons. This would again legalize a type of medical service under which the public may not be adequately or legally cared for.

Dr. Lukens: Why is there such an unfriendly attitude by the Hospital Association toward physicians? The hospitals want their share in the care of the indigent under Public Assistance; they collect for what the doctor does. Is there any way to create a better feeling? One has the impression that we are just being tolerated.

Dr. Palmer: We had better look to ourselves for the answers to such questions. Hospital administrators are laymen. To them management is a business proposition, expenses must be met, the budget must not be exceeded, everyone looks out for his own salary and security, and the doctors are required to see that professional service carries on. The directors' viewpoint is commercial; ours is professional. If we but knew how and would use our individual and collective position and influence properly, we might show them where they are wrong; we could do it if we approached them fearlessly. As long as we do our work faithfully and conscientiously, we should have no fear of hospital administrators.

Dr. Devereux: Hospital administrators tell us that theirs is a vested interest and that it should come first, ahead of the doctors.

The discussion on the Medical Practice Act was continued by Drs. Devereux, Reed, Sweeney, Clagett, Porter, and others, who discussed their own intern problems, shortage, refugee physicians, and everything relating to hospital practice.

Dr. Palmer, in closing, urged all to work for the passage of the amendments to the Medical Practice Act and closed with "Fight for them you must."

Councilor Buyers, in closing, expressed his appreciation of the large turnout, the intelligent presentation of the problems vexing the State Medical Society, and the lively interest shown by the members of the commission. He announced that the councilor district meeting would be held on Sept. 11 at the Traylor Hotel, Allentown. Walter J. Stein, *Reporter.*

Every alert medical practitioner will consider carefully the weighty significance of painless and apparently causeless bleeding in obstetric practice as set forth on page 1354.

TUBERCULOSIS ABSTRACTS

A Review for Physicians

PREPARED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Published through the co-operation of the Pennsylvania Tuberculosis Society and The Medical Society of the State of Pennsylvania

FAILURE to find tubercle bacilli in the sputum, even after repeated examination of successive specimens, is no justification for ruling out the possibility of tuberculosis. Least certain of the several methods commonly used is the staining of the direct smear of the untreated sputum. One supplementary method is to examine the stomach washings for tubercle bacilli, especially in the case of children who are likely to swallow the sputum. Roper and Ordway advocate its wider use for adults and offer impressive evidence of its value. Abstracts of their article follow:

GASTRIC LAVAGE IN ADULTS

The examination of fasting gastric contents by smears for tubercle bacilli, first reported in 1898, proved unreliable and the need for culture and animal inoculation was demonstrated. Since 1927 numerous articles have been published regarding this procedure in juvenile tuberculous patients. More recently the test has been used on adults.

This report presents the findings obtained by guinea pig inoculations of fasting gastric contents of tuberculous and nontuberculous patients. By the addition of this procedure to the usual methods, recovery of tubercle bacilli in tuberculous patients was practically doubled.

The studies were carried out at the Metropolitan Life Insurance Company Tuberculosis Sanatorium, during a 3-year period in which approximately 1000 patients were admitted, of whom 135 were diagnosed as having active pulmonary tuberculosis and the remainder were considered to be nontuberculous. This afforded opportunity for using controls.

Since 1929 the percentage of minimal cases admitted has almost trebled; in patients with moderately advanced disease it has decreased slightly; and in those with far-advanced involvement it has declined to one-third the former figure. Yet, the percentage of positive sputum cases has fallen despite the more frequent usage of animal inoculation (from 45.2 per cent in the period 1926-28 to 34.8 per cent in the period May, 1936, to May, 1939).

Of the 135 tuberculosis patients of the present study, 34.8 per cent showed positive recovery by sputum examinations alone. The addition of gastric lavage almost doubled this percentage; namely, 63 per cent. (Tables of the findings are described in detail.)

Sharp distinction is made between sputum and fasting stomach contents. Sputum refers to that bronchial secretion which is actually expectorated by coughing or clearing the throat. The gastric specimen contains that bronchial secretion which has gained entrance into the pharynx and has subsequently been swallowed. Gastric lavage was initially employed in children because of their inability to expectorate. By means of this same test in adults, many positives are obtained among those whose efforts to raise sputum are unsuccessful, as well as in many of those producing unsatisfactory or negative sputum.

Sputum produced by the tuberculous patient may contain tubercle bacilli one day and none on the next. The same variability occurs with gastric washings. Stiehm recommends that the test be given on each of 3 successive mornings.

The test is of assistance not only in the diagnosis but also in the management of the tuberculous patient. After years of treatment the sputum may disappear or become negative, while the gastric contents still exhibit virulent tubercle bacilli.

The procedure of obtaining the gastric specimen causes only slight discomfort to most persons and is not harmful; on the other hand, repeated forceful voluntary efforts to expectorate are uncomfortable and may be harmful.

The importance of proving or disproving the clinical and/or roentgenologic diagnosis of pulmonary tuberculosis is obvious; and of equal significance is the conclusive demonstration of the subsequent disappearance of tubercle bacilli from the bronchial secretions of tuberculous patients under treatment. Knowledge of these facts is of sufficient import to warrant and justify the use of gastric lavage whenever it is indicated by the absence or negativity of sputum.

Gastric Lavage in Adults With Pulmonary Tuberculosis, by Wm. H. Roper and Wm. H. Ordway, Amer. Rev. of Tuber., April, 1941.

OF WHAT value is pneumothorax in patients of middle age? Numerous studies of the results and complications attending artificial pneumothorax have been made, but these have nearly all been concerned with patients between the ages of 15 and 35. Our actual knowledge of the precise merits of pneumothorax in patients over 40 is still meager. For that reason a study made of World War veterans in whom pneumothorax was instituted merits attention.

PNEUMOTHORAX IN PATIENTS OVER FORTY

A survey was made of 431 white World War veterans in whom pneumothorax was instituted or attempted after they had passed their fortieth birthday, during a 5-year period beginning Jan. 1, 1935. Every one of the patients had a positive sputum and a roentgenographically demonstrable cavity at the inauguration of his collapse program. Eighty-one per cent had far-advanced disease; 19 per cent had moderately advanced lesions. The disease process was unilateral in 49.3 per cent and bilateral in 50.7 per cent. Fourteen per cent had at least one cavity whose diameter exceeded 4 cm. The average age was slightly under 44 years—7 per cent were over 50. The duration of the patients' tuberculosis prior to the attempted induction of pneumothorax ranged from one month to 18 years.

Patients with apparently permanent closure of the cavities and conversion of the sputa were classed as "successful" and these numbered 92, or 20.2 per cent. The "unsuccessful" numbered 48.7 per cent and the "impossible" 31.1 per cent. The various complications of artificial pneumothorax occurred with no greater frequency than among younger patients. Death was due directly to the complications of pneumothorax in 5 patients. Sixteen of the patients who died had pure tuberculous empyema, though it is difficult to estimate the degree in which the presence of intrapleural pus contributed to these deaths, for in all cases the pulmonary lesion was actively progressive. Including these 16 cases, the fatalities consequent to complications would number only 21 or 4.9 per cent of the patients treated, about what may be expected in general.

The shorter the time the patient has been ill and the less extensive his lesion, the greater the chances for the success of the therapy and the less the probability of occurrence of empyema. Closure of the cavity is effected earlier in patients whose disease history has been brief, though pleural effusions (a complication of little significance in most cases) are more likely to supervene in persons who have had tuberculosis only a short time.

The time interval of cavity closure and sputum conversion varies directly with the patient's age; most of the pneumothoraces became successful in the latter half of their first year. It seems advisable, therefore, to maintain pneumothoraces of doubtful efficacy for a longer time in persons over 40 than would be wise in younger patients.

Bilateral pneumothorax, properly administered in carefully selected cases, is well tolerated and ordinarily occasions no marked respiratory embarrassment. The surgical division of pleural adhesions is necessary to the completion of the collapse in a large number of persons in the fifth decade, just as it is in younger patients....

Weighing the results and the complications, the authors conclude that artificial pneumothorax is of distinct value in the treatment of patients over 40. It is not as effective as in younger persons, but neither is any other therapeutic measure. Thus far it appears that artificial pneumothorax is enduring in its effects in persons over 40, but final conclusions cannot be drawn until most or all patients in the successful group have been observed for a sufficient length of time after re-expansion to permit accurate estimation of the lasting effectiveness of their pneumothorax.

Artificial Pneumothorax in Patients Over Forty, by Sidney Diamond and Hubert T. Ivey, Amer. Rev. of Tuber., April, 1941.

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Deaths from Selected Causes in Pennsylvania

March, 1941

County	All Causes, Excluding Stillbirths	Still-births	Infant Deaths	Maternal Deaths	Cancer	Intra-cranial Lesions of Vascular Origin	Heart Disease	Nephritis	Pneu-monia	Tuber-culosis
Adams	38	1	2	0	6	6	8	4	2	1
Allegheny *	1306	57	80	5	155	96	407	105	75	58
Armstrong	74	2	8	0	7	5	27	7	3	3
Beaver	118	4	7	1	18	9	29	11	1	3
Bedford	36	2	4	0	4	4	15	5	2	0
Berks *	251	10	13	0	35	22	90	16	8	8
Blair	135	8	12	2	11	11	34	14	4	3
Bradford	72	2	6	1	5	4	25	8	3	1
Bucks	105	4	4	0	5	16	44	8	5	2
Butler	66	1	6	0	8	7	20	2	3	0
Cambria *	168	12	25	0	14	8	46	16	11	4
Cameron	6	0	0	0	1	0	4	1	0	0
Carbon	58	0	2	0	3	6	24	5	2	0
Centre *	49	1	1	0	5	2	23	3	0	3
Chester *	131	6	13	2	16	7	40	16	5	0
Clarion	26	2	2	0	3	1	8	4	3	1
Clearfield	74	4	12	0	3	8	17	6	4	2
Clinton	47	1	4	0	1	6	19	4	4	0
Columbia	50	2	2	0	4	6	18	2	2	1
Crawford	84	5	11	0	7	4	33	5	7	1
Cumberland	77	4	10	0	4	7	21	6	5	1
Dauphin *	223	9	13	1	26	18	75	34	10	5
Delaware	253	12	19	3	21	19	100	13	11	1
Elk	27	1	0	0	4	1	6	3	0	3
Erie	177	12	10	1	26	25	45	13	3	5
Fayette	165	14	19	0	16	14	39	10	7	2
Forest	4	0	2	0	0	0	2	0	0	0
Franklin *	73	3	7	2	3	4	26	10	3	0
Fulton	9	0	1	0	0	0	2	2	2	0
Greene	28	4	5	0	1	2	7	3	1	1
Huntingdon	40	3	3	1	2	3	12	3	1	2
Indiana	40	4	0	1	4	5	15	4	0	0
Jefferson	70	2	9	1	8	8	15	8	2	0
Juniata	13	1	0	0	0	1	6	1	0	1
Lackawanna	294	22	12	0	29	24	99	30	12	11
Lancaster	200	5	19	1	21	23	60	13	7	4
Lawrence	73	5	10	0	8	7	18	9	3	1
Lebanon	57	3	6	0	5	9	13	5	1	3
Lehigh *	169	8	19	0	10	19	46	7	7	2
Luzerne	368	14	24	1	35	18	122	34	17	16
Lycoming	110	4	8	1	9	12	40	9	2	5
McKean	46	4	3	1	4	3	15	6	2	2
Mercer	88	7	2	1	6	12	23	11	3	3
Mifflin	34	4	2	0	1	5	8	5	1	0
Monroe	25	0	1	0	5	4	5	7	0	0
Montgomery *	273	6	15	1	31	22	96	24	9	13
Montour *	31	1	3	0	1	1	8	4	4	2
Northampton	148	3	5	0	17	10	59	12	7	7
Northumberland	114	2	12	1	11	6	41	8	3	2
Perry	19	0	2	0	2	3	4	3	1	0
Philadelphia *	1950	34	75	4	251	125	748	168	110	82
Pike	10	0	0	0	1	0	5	3	1	0
Potter	14	1	0	0	2	3	5	0	1	0
Schuylkill	222	12	15	2	18	11	80	19	11	7
Snyder *	14	0	1	0	1	1	6	3	0	0
Somerset	60	4	7	0	9	7	11	7	3	1
Sullivan	4	0	0	0	2	0	1	0	0	0
Susquehanna	31	0	1	0	6	0	15	4	0	0
Tioga	36	0	1	0	3	1	15	2	1	0
Union	22	2	1	0	2	2	10	1	1	1
Venango *	59	3	5	0	2	4	18	1	1	1
Warren *	50	3	2	0	4	8	24	4	1	1
Washington	159	6	12	0	17	19	37	12	6	8
Wayne *	32	2	0	0	1	2	15	2	1	2
Westmoreland *	238	16	24	0	12	21	77	18	10	6
Wyoming	18	1	0	0	2	2	6	2	0	1
York	183	7	11	1	15	18	66	14	7	2
Institutions	198	0	0	0	12	10	51	14	17	37
State total	9442	372	610	35	981	747	3149	813	439	332

* Exclusive of deaths in state and federal institutions.

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, *Secretary*
8104 Jenkins Arcade
Pittsburgh, Pa.

CALL TO THE 1941 MEETING

The first meeting of the House of Delegates of The Medical Society of the State of Pennsylvania will be called to order in the Cardinal Room, Hotel William Penn, Pittsburgh, at 3 p. m., on Monday, Oct. 6, 1941. Notice relative to parliamentary requirements for consideration of amendments to the constitution and by-laws was published in this department in the May Journal.

A proposed amendment to the constitution was published in the June Journal, page 1177, is republished in this issue, and will be republished, together with the Call to the Meeting, in the August Journal, as well as any additional proposed amendments which may be received by Aug. 1, 1941.

Proposed Amendment to Constitution

In addition to the proposed amendment to Article IV of the Constitution of The Medical Society of the State of Pennsylvania as published in the June, 1941, Pennsylvania Medical Journal with the call to the 1941 meeting of the House of Delegates, which call and proposed amendment are herewith repeated, there is published an additional proposed amendment to the constitution received in due time and with signatures of 15 active members attached.

An amendment offered by the Blair County Medical Society to Article VIII, Section 1, of the Constitution of The Medical Society of the State of Pennsylvania, would delete the words "12 trustees who are also councilors," substituting the words *"and for each councilor district of the state, 1 trustee and 1 councilor."*

Proposed Amendment to By-Laws

The action of the Blair County Medical Society also contemplates the following addition to Chapter 3, Section 5, of the by-laws:

"At the councilor district meeting preceding the annual meeting of the State Society, whenever a trustee or a councilor for that councilor district is to be elected, the members of the councilor district present shall forward to the House of Delegates a nomination for trustee and for councilor."

An amendment offered by the Luzerne County Medical Society and received by the secretary on May 1, 1941, proposes that the second paragraph of Section 1, Article IV, of the constitution be deleted. The second paragraph reads as follows:

Physicians, otherwise qualified, who have taken their first citizenship papers, shall be eligible to membership. This membership is conditional upon the completion of citizenship within 6 years of the granting of first papers. Failure to comply with this provision will automatically terminate membership.

If the second paragraph is deleted, "Article IV—Membership" would then read as follows:

The membership of this society shall consist of citizens of the United States, members in good standing in the component county medical societies, and whose annual assessments in this society have been paid. This, however, shall not be construed to exclude from active membership any physician who may occupy a teaching position with any college or university within this state.

Values of Early Publication

Obviously, the business of the House of Delegates and the purposes of The Medical Society of the State of Pennsylvania are definitely facilitated and better served when resolutions proposed for consideration by the members of the House are published in advance of the October meeting. When thus distributed to the 9500 members of the society via The Pennsylvania Medical Journal, weeks or months in advance of the time for action thereon, delegates from component county societies may be advised by those they represent, advance consideration may be given by reference committees of the House, and the time given by members of the House while in session may be conserved.

Please address all proposed resolutions intended for the consideration of the 1941 House of Delegates to the office of the secretary of the society in time to have them appear in the August or the September issue of the Journal, or in both issues.

RESEARCH NOT GROUNDED

Brings Order From Chaos

The Journal this month has published a long list of the names of Pennsylvania physicians who have been called to serve their country in camps all over the United States. On first glance it makes dull reading, but between the lines a different story appears.

These are the men who have been uprooted from their usual way of life. Some of them must leave practices which may have taken years of struggle to establish. They go from the familiar routine of caring for civilians to the less familiar care of men in the service, hampered or helped as the case may be by army regulations.

Something more that does not appear on the printed page is the record of those remaining behind, sometimes their own families, and always their patients and fellow physicians who must join hands to bridge the gaps left by their departure. If patients were merely case numbers that could be transferred from one book to another it would simplify matters, but they are human beings. Yet, where there might be maudlin sentimentality and self-pity, there is quiet assumption of new responsibility and disregard of sacrifice.

Now, as never before, reservoirs of information are important. The State Society's Package by Mail Library Service at 230 State Street, Harrisburg, is ready to help in any way it can by sending out literature to borrowers. Physicians in military camps have this privilege as well as those at home. The Library Committee urges you to write for library packages, which may be kept for two weeks.

It is all too easy to question the value of quiet research in times like these. It is true that no one in this world with its strange contradictions can predict with certainty what will come, not even the leaders of nations. The medical profession could be swept along in a pellmell panic-stricken rush, or it can be true to its tradition of quiet reliability. The very purpose of medicine is to bring health out of sickness and order out of chaos. That it has always done and that it will continue to do.

Mary Elizabeth Taylor, *Librarian.*

MEDICAL STATESMANSHIP

Service Definite and Specific

In the June issue of the Journal appeared a summarized report covering 8 years of statewide medical service rendered to noninstitutionalized children of the indigent throughout the Keystone State under the aegis of the Emergency Child Health Committee and its recent successor, the Child Health Committee of The Medical Society of the State of Pennsylvania.

This month particular pride is taken in submitting for careful reading and emulation (excel it if you can) the report of the work of the child health committee of one of our component societies for the year 1940. Please note how the county medical society under discussion accepted a great responsibility in the discharge of which it correlated and co-ordinated most effectively the endeavors of equally willing workers, paid or unpaid, in a half-dozen city, county, state, and national professional, political, and welfare organizations.

When the above type of medical leadership as exemplified by the Berks County Medical Society is adopted by 51 per cent of the county medical societies throughout the United States, the medical profession will indeed have accomplished another volunteer advance in community statesmanship which, to paraphrase and quote, is "the art of changing a community from what it is into what it ought to be." The report is appended as taken from the February, 1941, issue of the *Bulletin* of the Berks County Medical Society, which, by the way, is loaded with one of the most inspiring series of complete reports (things accomplished) by officers and committees that has gladdened the eyes of ye olde secretary in many a year.

Report of Berks County Child Health Committee

To the President and Fellow Members of the Berks County Medical Society:

On Dec. 31 the Child Health Committee completed 5 years of active service in Berks County under the present chairmanship. During this time a total of 4657 children have been examined and 5179 defects have been corrected. This 5 years of service on the part of the society represents something very definite. Such service, rendered over an extended period, constitutes evidence that the society as a whole has accepted the responsibility of rendering preventive health service to children in the indigent groups. On the part of the families with whom we have worked there are trends that show a growing health consciousness and a better understanding of health measures and a greater willingness to co-operate.

Last April the Department of Public Assistance asked that a committee be appointed from the Council of Social Agencies to make a study of 200 families in Berks County who had been receiving public assistance over a period of 8 years. The Child Health Committee was asked to report on the health status of the children in this group, so, during the past 3 months, our 4 field workers have been concentrating on this special report.

To date, 243 children from 73 families have been examined. Some of the children in this group are over 16 and, therefore, not covered by the Child Health Committee program. Twenty-seven of these families are from rural areas. Only 12 of this group had no recommendations other than vaccination or toxoid; 133 of them, or 54 per cent, were either underweight or undernourished; 23 had eye defects, and 117 diseased tonsils; 77 children were recommended for dental care, and 132 were supplied with either cod liver oil or halibut oil and viosterol upon the recommendation of the examining physician.

These children represent a group who will always need protective care, and their future is the concern of the entire community. The outlook for the parents of these children to become self-supporting citizens is not very encouraging, and in order that the children may become socially responsible, a co-ordinate program of all the agencies will have to be planned, the nucleus of such a program being sound health planning.

Your committee functioned from January to August, with the assistance of 3 WPA field workers and one secretary. The project was suspended on Aug. 9, and a new project approved Sept. 20. Since that date we have been functioning with 4 field workers and a secretary. Two of these are working in the rural areas, one in the suburban areas, and one in the city. We have been told that this would be the last WPA appropriation for field workers. The State Supervisors have been asked to see what could be done toward building a permanent program, either through the existing social agencies or through volunteer groups. We have been assured that WPA secretarial help will be available as long as WPA funds are appropriated.

I would like to recommend, at the expiration of the project in Berks County, that our Visiting Nurse Association do the field work that is being done by the present WPA workers under the direction of the medical society and the same limitations as to the eligibility for service that we now observe. We have automatic referrals from the Department of Public Assistance, and my suggestion is that we adhere to these referrals, and whatever exceptions are made, be made by the Child Health Committee.

Your chairman wishes to express his thanks to the hospitals. As doctors, we can recommend corrections, but we are largely dependent upon the hospitals for carrying out our suggestions. I wish, too, to thank the Dental Society. In addition to work done in the dental clinics of the hospitals, many dentists have taken children into their offices and have given them complete dental service. The Dental Society has shown great interest in a dental program for indigent children. I want to thank the County Commissioners for their support during the present year. We have received $500 from them for transportation. Without this fund, our rural work would have been impossible.

We are indebted to WPA for the appropriation we have received that made our field work possible.

The Junior Woman's Clubs and interested individuals have again helped us with funds. The Association for the Blind has helped with our glasses. The State Department of Health has furnished biologicals. We have been given 20,000 halibut liver oil and viosterol capsules for distribution during the current year.

The committee wishes to extend its heartiest appreciation to the doctors who have so generously given their time in making these examinations.

Their attitude has been one of genuine concern about the health of the underprivileged child.

I feel that at this time we should have some expression of opinion as to what the society thinks about carrying on the program with some permanent connection at the expiration of the present WPA funds.

This is the only social service organization ever operated by physicians. All social service, which should have had its origin in the medical society, came into its own with this program. It would be a distinct loss to the community and to the medical society to have it discontinued.

Herewith is submitted a statistical and financial report of the year's work:

Financial Statement of Child Health Committee

Beginning Jan. 1, 1940; ending Dec. 27, 1940.

Receipts

Balance on hand Jan. 1, 1940	$16.94	
American Legion	25.00	
Oberlander Trust	50.00	
Mrs. Marie Keffer	2.00	
Mr. Gerber Schaeffer	50.00	
Jefferson Democratic Club	19.00	
Mt. Penn Junior Woman's Club	25.00	
Reimbursement for glasses	.75	
County Commissioners	500.00	
Child Welfare Department of Reading Woman's Club	25.00	
Reading Junior Woman's Club	50.00	
Miss Effie Good	3.00	
Berks County Junior Woman's Club	184.80	
Mrs. Sara Bard	1.00	
Contribution to petty cash account	17.14	
Total		$969.63

Expenditures

Glasses		$248.65	
Medical supplies		53.20	
Transportation		380.78	
Dentures		59.00	
Educational posters		6.45	
Office supplies		9.25	
Petty Cash—			
Stationery and supplies	$8.72		
Transportation	5.42		
Cleaning and janitor service	22.00		
		$36.14	
Total			$793.47
Balance as of Dec. 27, 1940			$176.16

Summary of Accomplishments

From Jan. 1, 1940, to Dec. 27, 1940.

- 397 initial examinations
- 626 re-checks for various physical defects
- 538 diagnostic procedures accomplished
- 90 re-examinations
- 80 miscellaneous defects corrected

Defects corrected or under correction:

- 104 vaccinations
- 100 toxoid
- 46 eye defects
- 15 ear defects
- 12 nasal obstructions
- 139 tonsillectomies
- 135 children received dental care
- 20 circumcisions
- 2 cervical gland defects corrected
- 1 thyroid gland defect corrected
- 3 lung affections
- 9 cardiac defects
- 1 venereal disease
- 19 malnutrition
- 9 orthopedic defects
- 4 deficiency diseases

Respectfully submitted,
(Signed) Robert M. Alexander,
Chairman.

LEST WE* FORGET

Medical preparedness committees of all county medical societies in Pennsylvania should by this time have made local application of the plan for "conservation" which was adopted by the 1940 House of Delegates of The Medical Society of the State of Pennsylvania as appended in abstract below:

(A)

When a physician determines he has to serve in one of the armed forces, arrangements should be made with another practitioner to take care of his practice, the locum tenens to agree to the arrangement.

(a) That moneys collected from patients by the locum tenens be placed in a separate fund.

(b) That after deducting necessary overhead expenses the balance be divided equally between the absent medical officer and the locum tenens.

(c) That institutional teaching and industrial appointments held at the time of entry into military service be made available upon return.

(d) That during the period of actual military service the member physician be exempt from payment of medical society dues.

(B)

(a) For the preservation of adequate medical service to the people of all communities.

(b) For modification of medical fees to families whose income has been reduced through conscription or enlistment.

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* Individual members and the county medical society as a whole.

MEDICAL PREPAREDNESS

You and Your County Society

Since the President spoke, both the Congress and the Senate have passed the so-called Lease-Lend Bill. This was done largely because of the general public sentiment. Sincere isolationists, having executed their democratic rights in voting and working against the passage of this bill, have bowed to the majority and are now willing to work and sacrifice for the full attainment of the utmost aims in the Lease-Lend Bill.

A few weeks ago the society aided in bringing Dr. Bove to speak at a special meeting. Those who attended felt that the evening was well spent. We are fortunate that the chairman of our program committee, Dr. Gerald S. Backenstoe, has been especially interested in war medicine, and feeling that utmost preparedness would pay dividends even though many preparations may never be needed, he has made a collection of papers and articles on this subject from abroad.

Dr. Backenstoe has kindly drawn up a summary of what we as individual members and the society as a whole may do. The summary follows:

What the Society Can Do:

1. Bolster and aid in maintaining public morale.
2. Sponsor
    a. Blood typing campaigns
    b. Tetanus immunization campaigns, and
    c. Later—typhoid inoculations
    d. Rodent control, information controls
3. Establish (provisionally) the organization for
    a. Base hospitals
    b. Clearing stations
    c. Aid centers
4. Educate large groups in (if and when need seems imminent)
    a. Gas and gas mask usage, symptoms, treatment
    b. Control of hemorrhage
    c. First aid for
        (1) Fractures
        (2) Wounds
        (3) Burns
    d. Sanitation and water safety measures. Publish bulletins, circulars, and placards for above.
5. Set up the proper personnel for all above casualty stations.
6. Be prepared to train civilian resuscitation squads.
7. Be prepared to train decontamination squads.
8. Be prepared to train transfusion teams.
9. Be prepared to train fracture teams.
10. Be prepared to establish sera and chemotherapy stations.
11. List all trucks for ambulance usage.
12. List all private cars for messengers and supply usage.
13. Establish a sanitary committee to work with the city engineer's office in re-establishing sewer control and disposal of the dead (animals and humans).
14. Set up an executive control to co-ordinate all above with the civic authorities and with all trained groups, such as the Red Cross, civilian nurses, American Legion, Boy Scouts, etc., and aid the above program through their leaders.
15. Co-ordinate with state and national medical societies.
16. Co-ordinate with military requirements.

What the Individual Physician Can Do:

1. Keep up to date with foreign letters in the *A. M. A. Journal,* A. R. P. bulletins, war medicine, etc.
2. Review modern treatment of war wounds, gassed cases, neuroses, etc.
3. Type or have typed all people possible.
4. Give tetanus toxoid when possible.
5. Dissipate defeatism.
6. Respond promptly to requests from A. M A. and State Society.

—*Lehigh County Medical Bulletin,* April, 1941.

PENNSYLVANIA MEDICAL RESERVE OFFICERS ORDERED TO ACTIVE DUTY—ARMY OR NAVY

The Pennsylvania Committee on Medical Preparedness herewith publishes the names, county by county, of physicians ordered to active military service, nonmembers as well as members of our component county medical societies; not a few enrolled as members of National Guard organizations, but the majority are members of the Medical Reserve Corps. Many of these physicians indicated as nonmembers entered the service immediately upon completion of their hospital intern year or shortly thereafter; therefore, did not have sufficient time to obtain active membership in a county medical society.

A special effort has been made to record accurately, as of June 15, 1941, the name, service, rank, and present location of each. For co-operation in this endeavor the committee is indebted to the secretaries of component county societies, all of whom had opportunity to review the copy for their respective societies before publication.

The committee wishes to call to the attention of Journal readers "Medical Preparedness—You and Your County Society" on page 1339; "Lest We Forget" on page 1338; and the editorial "Missing the Point" on page 1325.

Adams County

*MacMinn, Charles C., 1st Lieut., New Oxford, Ft. Belvoir, Va.
*Miller, Edgar Allen, Major, Gettysburg, Indiantown Gap.

Allegheny County

*Abrams, Frank, 1st Lieut., Pittsburgh, Ft. Belvoir, Va.
Averill, Roy Samuel, 1st Lieut., Pittsburgh, Ft. Geo. G. Meade, Md.
Bardonner, John Nicholas, 1st Lieut., McKees Rocks, Savannah Air Base, Ga.
*Barnhardt, Russell A., 1st Lieut., Pittsburgh, Carlisle Barracks, Carlisle, Pa.
Bastacky, Morris, 1st Lieut., Pittsburgh.
*Battaglia, Frederick I., 1st Lieut., McKeesport, Indiantown Gap, Pa.
Becker, Philip Lawrence, 1st Lieut., Pittsburgh, Ft. Meade, Md.
*Berger, Emanuel, 1st Lieut., Pittsburgh, Camp Shelby, Miss.
Benz, George Henry, 1st Lieut., Pittsburgh, Ft. Eustis, Va.
Blazina, William Marion, 1st Lieut., McKeesport, New Cumberland, Pa.
*Blank, Philip, 1st Lieut., Pittsburgh, Ft. Eustis, Va.
*Boucek, Charles M., Captain, Pittsburgh, Ft. Knox, Ky.
*Boucek, Richard J., 1st Lieut., Pittsburgh, Camp Blanding, Fla.
*Boyce, Bingham, Captain, Bridgeville, Ft. Geo. G. Meade, Md.
*Braden, Frank R., Jr., Coraopolis, 1st Lieut., Camp Blanding, Fla.
*Browdie, Abraham Saul, 1st Lieut., Pittsburgh, Camp Lee, Va.
Buvinger, Lawrence C., 1st Lieut., Pittsburgh, Ft. Story, Va.
*Cambest, Michael A., Jr., Pittsburgh, 1st Lieut., Ft. Belvoir, Va.
*Cameron, Donald Y., Captain, Mt. Lebanon, Ft. Monroe, Va.
*Carroll, Edward Joseph, Jr., Captain, Pittsburgh, Walter Reed Hosp., Washington, D. C.
*Carson, Winfield B., Jr., Captain, Pittsburgh, Camp Blanding, Fla.
*Chesko, Clement C., Tarentum, 1st Lieut.
*Cohen, Morris M., 1st Lieut., Pittsburgh, Ft. Monroe, Va.
*Cohen, Reuben Robert, Captain, Pittsburgh, Indiantown Gap, Pa.
*Cravotta, Charles Angelo, Captain, Pittsburgh, Ft. Geo. G. Meade, Md.
*Davis, Jacob Ralph, 1st Lieut., Pittsburgh, Camp Blanding, Fla.
*Dietrich, Sterrett E., Captain, Ingram, Carlisle Barracks, Carlisle, Pa.
Edwards, William Charles, 1st Lieut., Pittsburgh, Ft. Story, Va.
*Emmerling, John Frederick, Captain, Pittsburgh, Indiantown Gap, Pa.
Engelman, Frank Ephraim, Captain, Pittsburgh.
*Englehart, Charles Edward, Captain, Edgewood, Ft. Myer, Va.
*Etter, Lewis E., Captain, Warrendale, Ft. Geo. G. Meade, Md.
Ferkany, Joseph Ernest, 1st Lieut., McKees Rocks, Ft. McClellan, Ala.
*Fishkin, Hymel, 1st Lieut., Natrona Heights, Ft. Geo. G. Meade, Md.
Gallaher, George R., Captain, Pittsburgh, Indiantown Gap, Pa.
Geyer, Harry Maurice, 1st Lieut., Pittsburgh.
Gilardi, Robert John, 1st Lieut., Pittsburgh, Camp Shelby, Miss.
Glick, Herbert Dudley, Captain, McKeesport.
*Goldberg, Sol, Captain, Pittsburgh, La Garde Gen. Hosp., New Orleans, La.
*Goldman, Gilbert S., 1st Lieut., Pittsburgh, Ft. Geo. G. Meade, Md.
*Guthrie, Michael A., Captain, Pittsburgh, Ft. Belvoir, Va.
*Haber, Richard Edward, 1st Lieut., Pittsburgh, Ft. Meade, Md.
*Hegarty, Francis A., Captain, Pittsburgh, Ft. Geo. G. Meade, Md.
Helzlsouer, Wilbert J., 1st Lieut., Dravosburg, Camp Shelby, Miss.
Herman, Julius, 1st Lieut., Crafton.
*Hockenberry, Everett D., Major, Etna, District Recruiting Office, Pittsburgh.
*Hourican, Donald J., Wilkinsburg, Fitzsimmons Gen. Hosp., Denver, Colo.
Irey, Nelson Sumner, 1st Lieut., Woodville, Indiantown Gap, Pa.
*Itscoitz, Seymour E., 1st Lieut., McKeesport, Camp Shelby, Miss.
*Jacques, George A., Captain, Brackenridge, Indiantown Gap, Pa.
Javois, Alexander John, Captain, Pittsburgh, Camp Lee, Va.

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* Indicates member.

*Jose, John Frederick, Captain, Curtisville, Indiantown Gap, Pa.
*Kaufman, I. Leonard, Pittsburgh, Captain, Camp Lee, Va.
Kirk, Milo M., 1st Lieut., Pittsburgh.
Koenig, Frederick William R., 1st Lieut., Pittsburgh, Ft. Geo. G. Meade, Md.
*Kreiger, A. A., 1st Lieut., Pittsburgh, Indiantown Gap, Pa.
*Landy, Julius C., 1st Lieut., Pittsburgh, Ft. Geo. G. Meade, Md.
*Leavy, Philip G., Pittsburgh, 1st Lieut., Stark Gen. Hosp., Charleston, S. C.
*Levison, David J., Pittsburgh, Captain, Camp Shelby, Miss.
*McDermott, Robert W., 1st Lieut., Munhall, Gen. Dis., U. S. Army, 90 Church St., New York, N. Y.
*McElroy, Walton Dixon, 1st Lieut., McKeesport, Ft. Geo. G. Meade, Md.
McGill, John Francis, 1st Lieut., Pittsburgh, Camp Shelby, Miss.
*McLaughlin, William B., Captain, Pittsburgh.
*McLenahan, Thomas, Jr., Pittsburgh, Camp Lee, Va.
McMillan, Donald Lamont, 1st Lieut., Glenshaw, Ft. Eustis, Va.
*McNellie, William Owen, 1st Lieut., Pittsburgh, Camp Blanding, Fla.
*Masters, Raymond Eakin, 1st Lieut., E. McKeesport, Ft. Belvoir, Va.
*Means, Louis L., Captain, McKeesport, Indiantown Gap, Pa.
*Medof, Milton Irving, Captain, Pittsburgh, Savannah Air Base, Savannah, Ga.
Mendoza, Joseph William, Captain, Pittsburgh, Indiantown Gap, Pa.
*Mihelic, Fabian M., 1st Lieut., Pittsburgh, Camp Lee, Va.
Milburn, Robert E., 1st Lieut., Dixmont, Ft. Story, Va.
*Miles, Collum A., 1st Lieut., Clairton, Camp Lee, Va.
*Miller, Kenneth Frederick, Major, West View, Washington, D. C.
*Milligan, Alexander M., Lieut. Col., Pittsburgh.
*Morrocco, John D., 1st Lieut., Pittsburgh, Indiantown Gap, Pa.
*Norton, Fred L., Belle Vernon, 1st Lieut., Camp Davis, N. C.
*Oetting, William H., Jr., Wilkinsburg, 1st Lieut., Tilton Gen. Hosp., Ft. Dix, N. J.
*Olah, George Wm., 1st Lieut., Pittsburgh, Camp Lee, Va.
*Patterson, Geo. W., 1st Lieut., North Braddock, Camp Lee, Va.
Paul, John S., 1st Lieut., Pittsburgh, Ft. Myer, Va.
*Petraglia, Angelo A., 1st Lieut., Pittsburgh, Indiantown Gap, Pa.
Plesset, Marvin Robert, 1st Lieut., Pittsburgh, Indiantown Gap, Pa.
*Purvis, James D., 1st Lieut., Pittsburgh, Camp Lee, Va.
*Reher, Charles August, Captain, Clinton, Ft. Monroe, Va.
*Riley, Francis A., 1st Lieut., Pittsburgh, Indiantown Gap, Pa.
*Rittenhouse, Emory A., McKeesport, 1st Lieut., Station Hosp., Ft. Myer, Va.
Robbins, Ben, 1st Lieut., Pittsburgh.
*Rollins, Clark Thomas, 1st Lieut., Brackenridge, Indiantown Gap, Pa.
*Rosenbloom, Meyer Abraham, 1st Lieut., Pittsburgh, Ft. Monroe, Va.
*Ruben, J. Eugene, 1st Lieut., Pittsburgh, Ft. Story, Va.
*Rusbridge, Harold W., Wilkinsburg, Captain, Indiantown Gap, Pa.
*Sanes, Gilmore M., Pittsburgh, 1st Lieut., Stark Gen. Hosp., Charleston, S. C.
Sapira, Harry Albert, Captain, Elizabeth, Ft. Monroe, Va.
Schaefer, William Carl, 1st Lieut., Pittsburgh, Camp Lee, Va.
*Schultz, Edward M., Captain, McKees Rocks, Indiantown Gap, Pa.
Scott, James Vickers, 1st Lieut., Pittsburgh, Ft. Belvoir, Va.
*Shibler, Samuel W., Carnegie, 1st Lieut., Cantonment Hosp., Ft. Geo. G. Meade, Md.
Silverblatt, Bernard L., 1st Lieut., Pittsburgh, Camp Lee, Va.
Simpson, Allan James, Jr., 1st Lieut., McKeesport, Camp Shelby, Miss.
*Sisler, Bruce H., Lyons, N. J., Camp Blanding, Fla.
*Skinner, Robert W., III, Lieut., Pittsburgh, North Wales, Pa.
Sloane, Milton Bennet, 1st Lieut., Pittsburgh, Ft. Bragg, N. C.
*Srodes, William G., Major, Woodville, Indiantown Gap, Pa.
*Stept, Raymond, 1st Lieut., Pittsburgh, Camp Lee, Va.
*Stewart, Wayne H., 1st Lieut., Naval Reserve, Coraopolis, Naval Recruiting Sta., Pittsburgh.
Stock, Aaron Hirsh, 1st Lieut., Pittsburgh, Ft. Belvoir, Va.
Stratton, James David, 1st Lieut., Brackenridge.
Sugerman, Joseph Richard, 1st Lieut., Pittsburgh, Denver, Colo.
*Sutton, Robert L., Captain, Bellevue, Ft. Eustis, Va.
Taksa, David Samuel, 1st Lieut., Elizabeth, Air Base, Tallahassee, Fla.
*Terlizzi, Carmelo Leonard, 1st Lieut., Duquesne, Ft. Belvoir, Va.
*Thompson, Thomas E., Jr., 1st Lieut., Avalon, Ft. Belvoir, Va.
*Toloff, Edward M., Pittsburgh, Aberdeen Prov. Grounds, Aberdeen, Md.
Vernocy, William Charles, 1st Lieut., Coraopolis, Camp Lee, Va.
*Weaver, Thomas D. L., 1st Lieut., Bellevue, Ft. Eustis, Va.
*Weigel, John E., Captain, Pittsburgh, Ft. Geo. G. Meade, Md.
*Wieland, Wesley W., Ft. Hoyle, Md.
*Wirts, Carl A., 1st Lieut., Pittsburgh, Ft. Story, Va.

ARMSTRONG COUNTY

*Fraley, Henry Watson, 1st Lieut., Leechburg, Camp Lee, Va.
*Ilyas, Shakir Thomas, 1st Lieut., Rural Valley, Ft. Eustis, Va.
*McCafferty, John S., 1st Lieut., Freeport, Indiantown Gap, Pa.
*Stratton, James D., 1st Lieut., Brackenridge, Ft. McPherson, Atlanta, Ga.
*Welsh, John W., 1st Lieut., Leechburg, Camp Davis, N. C.

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* Indicates member.

BEAVER COUNTY

Bush, Herman, 1st Lieut., Beaver Falls.
*Douds, Harry E., Captain, Beaver Falls.
Eisner, Albert L., Captain, Monaca, Camp Pendleton, Va.
*Gressley, Donald W., Lieut., Beaver, U. S. N., Washington, D. C
Jones, Harry B., Aliquippa.
*McLaren, Harold J., Major, New Brighton.
*Nave, John A., Captain, Beaver Falls, Indiantown Gap, Pa.
Selkovits, Sidney Cecil, 1st Lieut., Aliquippa.
*Shaffer, Donald Y., Captain, New Brighton, Ft. Geo. G. Meade, Md.
*Weyand, James G., Captain, Beaver, Washington, D. C.

BEDFORD COUNTY

*Maffucci, Victor, Jr., 1st Lieut., Everett, Camp Lee, Va.

BERKS COUNTY

*Brennan, Andrew, Captain, Birdsboro, Ft. Monroe, Va.
*Carabello, Natal, 1st Lieut., Reading, Indiantown Gap, Pa.
*Deibert, Glenn A., 1st Lieut., Reading, Indiantown Gap, Pa.
*Ericksen, Arthur N., 1st Lieut., Reading, Ft. Geo. G. Meade, Md.
*Giordano, Anthony M., 1st Lieut., Reading, Ft. Geo. G. Meade, Md.
*Heinbach, Wilfred F., Jr., Reading, Philippine Islands.
Knoll, George M., 1st Lieut., Hamburg State San., Hamburg, Ft. Belvoir, Va.
*Moyer, Donald G., Major, Wyomissing, Ft. Monroe, Va.
*Sweitzer, Carl E., 1st Lieut., Hamburg, Indiantown Gap, Pa.

BLAIR COUNTY

*Barnes, Russell H., 1st Lieut., Altoona, Indiantown Gap, Pa.
*Bloom, Charles H., Captain, Altoona, Altoona Induction Board, Altoona, Pa.
*Daugherty, Charles B., Major, Altoona, Indiantown Gap, Pa.
*Hendricks, Charles S., Colonel, Altoona, Indiantown Gap, Pa.
*Hull, Logan E., 1st Lieut., Altoona, Camp Blanding, Fla.
*Ingoldsby, E. C., Captain, Altoona, Camp Shelby, Miss.
*Miller, Marlyn W., 1st Lieut., Altoona, Ft. Geo. G. Meade, Md.
*Schultz, Edward J., Captain, Claysburg.
*Weest, Harry W., Lieut. Col., Altoona, Indiantown Gap, Pa.

BRADFORD COUNTY

*Cady, Joseph B., 1st Lieut., Sayre, Indiantown Gap, Pa.
Campbell, Joseph L., Captain, Ft. Bragg, N. C.
*Redding, Willis A., 1st Lieut., Towanda, Indiantown Gap, Pa.

BUCKS COUNTY

*Flory, Clyde R., Lieut. Commander, Sellersville, U. S. Naval Hosp., Philadelphia, Pa.
*Keithan, John F., 1st Lieut., Doylestown, Camp Lee, Va.
*Thompson, Charles M., Lieut., Newtown, U. S. Naval Hosp., Philadelphia, Pa.

BUTLER COUNTY

*Hinchberger, Paul A., 1st Lieut., Butler, Indiantown Gap, Pa.
Hoch, Vincent A., 1st Lieut., Butler, Ft. Geo. G. Meade, Md.
Leslie, Frank Geo., 1st Lieut., Butler, Camp Lee, Va.
*McFarland, Paul, 1st Lieut., Saxonburg.
*Siegel, John M., 1st Lieut., Butler, Indiantown Gap, Pa.
*Turnblacer, C. B., 1st Lieut., Butler, Carlisle Army Medical School, Carlisle, Pa.

CAMBRIA COUNTY

*Ashman, Philip, 1st Lieut., Vintondale, Camp Holobird, Baltimore, Md.
*Doyle, Albert F., Captain, Johnstown, Indiantown Gap, Pa.
*Dvorchak, George E., 1st Lieut., Patton, Camp Lee, Va.
Eperjessy, Ernest Z., 1st Lieut., Johnstown, Ft. Kobbe, Canal Zone.
*Grady, James W., 1st Lieut., Johnstown, Indiantown Gap, Pa.
*Hatch, Joseph C., Lieut., Johnstown, U. S. Navy, Portsmouth, Va.

CARBON COUNTY

*Dougherty, Francis M., 1st Lieut., Summit Hill, Camp Blanding, Fla.

CENTRE COUNTY

*Cullen, Esker W., 1st Lieut., State College, Carlisle Barracks, Carlisle, Pa.
*Glenn, Herbert R., 1st Lieut., U. S. Marines, State College, U. S. Marine Base, Paris Island, Ga.
*Harris, Harold B., 1st Lieut., Bellefonte, Ft. Eustis, Va.
*Hoffman, Richards H., 1st Lieut., Bellefonte, Randolph Field, Texas.
*Mateer, Eugene H., 1st Lieut., State College, Ft. Benning, Ga.

CHESTER COUNTY

*Brown, Harry, Glenmore.
*Clark, Joseph G., 1st Lieut., West Chester, Indiantown Gap, Pa.
*Ewing, Agnew R., West Grove.
*Goldman, Louis, 1st Lieut., Pennhurst, Ft. Benning, Ga.
*Hanes, William J., Captain, Devon, Ft. Belvoir, Va.
*Uhde, George Irvin, 1st Lieut., Kennett Square.

CLARION COUNTY

*Yingling, Paul L., 1st Lieut., Shippenville.

CLEARFIELD COUNTY

*Erhard, Elmo E., Captain, Curwensville, New Cumberland, Pa.

CLINTON COUNTY

Goldstein, Ralph Leon, 1st Lieut., Renovo, Camp Shelby, Miss.

COLUMBIA COUNTY

*Beckley, Daniel W., Bloomsburg, Pa., Great Britain (volunteered services).

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* Indicates member.

*Confair, W. F., Captain, Benton, Fort Geo. G. Meade, Md.
*Moser, G. Paul, Captain, Bloomsburg, Carlisle Barracks, Carlisle, Pa.

Crawford County

*Bankert, Charles W., Captain, Linesville, Camp Lee, Va.
*Benz, Carl F., 1st Lieut., Linesville, Camp Shelby, Miss.

Cumberland County

*Boyson, William A., Major, Mechanicsburg, Indiantown Gap, Pa.
*Brandt, Charles R., Captain, Mechanicsburg, Carlisle Barracks, Pa.
*Miller, John V., Captain, Dillsburg, Ft. Belvoir, Va.
Whitcomb, Luther Myron, 1st Lieut., Carlisle, Walter Reed Hosp., Washington, D. C.

Dauphin County

Bennett, Webster W., 1st Lieut., Indiantown Gap, Pa.
*Everhart, Edgar S., Lieut. Col., State Headquarters, Selective Service, Harrisburg.
Grana, Philip C., 1st Lieut., Harrisburg, Indiantown Gap, Pa.
*Hecker, Arthur O., Captain, Harrisburg, Indiantown Gap, Pa.
*Herr, Paul S., Captain, Harrisburg, Selective Service.
*Hoffman, Carl C., 1st Lieut., Harrisburg, Indiantown Gap, Pa.
*Keeney, Paul A., Major, Harrisburg, Indiantown Gap, Pa.
*Lawson, E. Kirby, Jr., 1st Lieut., Penbrook, Camp Lee, Va.
*McGlynn, Patrick J., Harrisburg, U. S. Naval Base, Argentia, Newfoundland.
*O'Brien, James N., 1st Lieut., Harrisburg, Ft. Geo. G. Meade, Md.
Sage, Bernard A., 1st Lieut., Harrisburg, Denver, Colo.
*Schwab, Carl L., 1st Lieut., Harrisburg, Indiantown Gap, Pa.

Delaware County

Bailey, Charles P., 1st Lieut., Upper Darby, Indiantown Gap, Pa.
*Egbert, E. Wayne, 1st Lieut., Chester, Ft. Geo. G. Meade, Md.
Finkelman, Samuel, 1st Lieut., Upper Darby, Ft. Geo. G. Meade, Md.
*Gibson, W. B., 1st Lieut., Indiantown Gap, Pa.
*Hand, Patrick J., 1st Lieut., Glenolden, Indiantown Gap, Pa.
*Hayes, Merrill B., 1st Lieut., Chester, Ft. Belvoir, Va.
*Klopp, John B., Major, Chester, Washington, D. C.
*Mather, Clayton B., Captain, Drexel Hill, Ft. Geo. G. Meade, Md.
*Reynolds, Arthur S., Medical Field School, Carlisle, Pa.
*Schubart, Geo. R., 1st Lieut., Drexel Hill, Ft. Monroe, Va.

Elk County

*Bresler, Rubin R., 1st Lieut., Emporium, Ft. Belvoir, Va.
*Christman, Albert H., 1st Lieut., Emporium, Ft. Eustis, Va.
*Simpson, Robert C., Captain, Ridgway, 99th Field Artillery, Caribbean Force.

Erie County

*Dusckas, James J., Erie, Ft. Monroe, Va.
*Ehrler, August H., Captain, North East, Ft. Belvoir, Va.
*Mango, Albert E., Captain, Erie, Indiantown Gap, Pa.
Mango, Carl L., 1st Lieut., Erie, Savannah, Ga.
*Mountain, Edward R., 1st Lieut., Erie.
*Riester, Herman W., 1st Lieut., Erie, Indiantown Gap, Pa.
Woolhandler, Harry W., Captain, Erie, Ft. Belvoir, Va.
*Zeman, Erwin D., 1st Lieut., Erie.

Fayette County

*Cloud, Milton H., 1st Lieut., Uniontown, Ft. Eustis, Va.
*Hubbard, Charles C., 1st Lieut., Uniontown, Indiantown Gap, Pa.
*Johnson, William A., 1st Lieut., Uniontown, Carlisle Barracks, Carlisle, Pa.
*Larkin, Francis L., Captain, Uniontown, Indiantown Gap, Pa.
*Maher, Regis M., 1st Lieut., Uniontown, Camp Lee, Va.
Mahoney, Vincent P., 1st Lieut., Connellsville, Ft. Eustis, Va.
*Rogel, Louis F., 1st Lieut., Uniontown, Ft. Monroe, Va.
Shibler, Samuel W., 1st Lieut., Uniontown, Ft. Eustis, Va.
*Staman, Harry, 1st Lieut., Uniontown, Ft. Eustis, Va.
White, George S., 1st Lieut., Uniontown, Ft. Geo. G. Meade, Md.
*Wilt, Harold L., 1st Lieut., Brownsville, Ft. Belvoir, Va.

Franklin County

*Clutz, Paul A., Mercersburg, U. S. Naval Service.
*Ferkany, Joseph E., 1st Lieut., South Mountain, Ft. McClellan, Ala.
*Guenon, William A., 1st Lieut., Greencastle, Camp Blanding, Fla.
Hartman, Owen W., 1st Lieut., Chambersburg.
*Manges, John P., 1st Lieut., Scotland, Fitzsimons Hosp., Denver, Colo.
Silver, Sam., 1st Lieut., Waynesboro, Ft. Belvoir, Va.
*Sowers, John W., Fayetteville, Walter Reed Hosp., Washington, D. C.

Greene County

*Blair, Albert J., 1st Lieut., Waynesburg, Indiantown Gap, Pa.
*Brock, Ernest D., Waynesburg, El Paso, Tex.
Clark, McGill, 1st Lieut., Crucible.
Downey, Regis F., Greensboro.
*Hazlett, Frank D., Major, Waynesburg, Camp Shelby, Miss.

Huntingdon County

*Steele, Frederic H., Captain, Huntingdon, Ft. Story, Va.

Indiana County

*Peterman, James E., 1st Lieut., Indiana, Surgeon General's Office, Washington, D. C.
*Rech, Joseph F., Lieut., Indiana, Norfolk Naval Hosp., Norfolk, Va.
Rugh, L. D., 1st Lieut., Saltsburg, Indiantown Gap, Pa.
*Volkin, Leonard B., 1st Lieut., Ernest, Camp Lee, Petersburg, Va.
*Widdowson, William W., 1st Lieut., Indiana, U. S. Army Dispensary, Philadelphia.

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* Indicates member.

JEFFERSON COUNTY

*Jacobson, Robert M., 1st Lieut., Punxsutawney, Ft. Belvoir, Va.
*Sedwick, Jack D., 1st Lieut., Brockway, Ft. Monroe, Va.
*Shaffer, Robert L., Major, Brookville, Ft. Belvoir, Va.

JUNIATA COUNTY

*Dawe, George G., Captain, Mifflintown, Ft. Belvoir, Va.

LACKAWANNA COUNTY

*Ball, Myron H., 1st Lieut., Scranton, Camp Lee, Va.
*Banick, Vincent W., Captain, Scranton, Langley Field, Va.
*Bernstein, Albert A., 1st Lieut., Scranton, Ft. Belvoir, Va.
*Boylan, Joseph T., 1st Lieut., Scranton, Indiantown Gap, Pa.
*Fish, Henry, 1st Lieut., Scranton, Camp Lee, Va.
*Joyce, William T., 1st Lieut., Minooka, Indiantown Gap, Pa.
*LaBelle, Charles F., Captain, Dunmore, Indiantown Gap, Pa.
*McDonnell, Thomas J., 1st Lieut., Dunmore, Baltimore, Md.
Miller, Elmer Harry, 1st Lieut., Scranton, Ft. Belvoir, Va.
*Patrick, Nicholas E., 1st Lieut., Scranton, Ft. Geo. G. Meade, Md.
*Riley, Francis Wm., 1st Lieut., Scranton, Indiantown Gap, Pa.
*Rosenberg, Milton, Major, Scranton, Indiantown Gap, Pa.
*Smiley, Bernard, Captain, Scranton, Indiantown Gap, Pa.
*Swift, John E., Major, Scranton, Indiantown Gap, Pa.
Thomas, David P., 1st Lieut., Elmhurst, Ft. Jackson, S. C.
*Valverde, Mario, 1st Lieut., Scranton, Medical Corps, Army Medical Center, Washington, D. C.

LANCASTER COUNTY

*Carbonetta, Reno R., 1st Lieut., Lancaster, Indiantown Gap, Pa.
*Duttenhofer, Charles S., Churchtown, Lieut. Col., Indiantown Gap, Pa.
*Edwards, William C., 1st Lieut., Elizabethtown, Ft. Story, Va.
*Hammond, Charles P., 1st Lieut., Lancaster, Camp Shelby, Miss.
Harnish, Robert L., 1st Lieut., Denver, Ft. Belvoir, Va.
*Hartman, William F., Lieut. (jg), Lancaster, Naval Air Base, Miami, Fla.
*Hauck, Samuel M., Lancaster, Captain, Indiantown Gap, Pa.
*Hogg, Harold K., Lancaster, Lieut. Col., Indiantown Gap, Pa.
*Hoover, Carl H., Captain, Lancaster, Indiantown Gap, Pa.
*Meiser, Edgar W., Captain, Lancaster, Indiantown Gap, Pa.
*Pavlatos, August C., Captain, Lancaster, Indiantown Gap, Pa.
*Pohl, Charles M., 1st Lieut., Manheim, Edgewood Arsenal, Md.
*Sandhaus, Julius L., 1st Lieut., Lancaster, Camp Lee, Va.
*Sloane, Milton B., 1st Lieut., Lancaster, Ft. Bragg, N. C.
*Stahr, Charles P., Colonel, Lancaster, Indiantown Gap, Pa.
*Uhde, George S. I., Columbia, Edgewood Arsenal, Md.
*Wagner, Ira G., Captain, Lancaster, Ft. Geo. G. Meade, Md.
*Weaver, Emerson M. F., Captain, Lancaster, Ft. Randolph, Tex.
*Welch, J. G., 1st Lieut., Lancaster, Indiantown Gap, Pa.

LAWRENCE COUNTY

*Caplan, Aaron, 1st Lieut., Ellwood City, Ft. Geo. G. Meade, Md.
*Ginsberg, Joseph E., 1st Lieut., New Castle, Savannah Air Base, Savannah, Ga.
*Markley, Ralph, 1st Lieut., New Castle, Indiantown Gap, Pa.

LEBANON COUNTY

*Boger, John D., Lieut. Col., Lebanon, Indiantown Gap, Pa.
*Fister, Thomas R., 1st Lieut., Fredericksburg, Indiantown Gap, Pa.
*Olson, Robert M., 1st Lieut., Palmyra, Indiantown Gap, Pa.
*Reis, Paul B., Captain, Palmyra, Indiantown Gap, Pa.

LEHIGH COUNTY

Covalesky, Victor J., 1st Lieut., Allentown.
*Dilcher, Robert H., 1st Lieut., Allentown, Indiantown Gap, Pa.
*Grossman, Aaron, Captain, Allentown, Carlisle Barracks, Carlisle, Pa.
*Helwig, Frederick G., 1st Lieut., Allentown, Camp Blanding, Fla.
*Meckstroth, Herman, 1st Lieut., Red Hill, Indiantown Gap, Pa.
Miller, Myles R., Northampton, U. S. Naval Service, Virginia Beach, Va. (volunteered services).
Sassaman, William, U. S. Naval Service, California (volunteered services).
*Weston, Kenneth R., Lieut., Allentown, Philadelphia Navy Hosp.

LUZERNE COUNTY

*Adonizio, Anthony C., 1st Lieut., Pittston, Philadelphia ZM Depot, Philadelphia, Pa.
*Brunacci, Alfred, Captain, W. Pittston, Camp Pendleton, Va.
*Colley, Arthur T., 1st Lieut., Retreat.
Corrigan, Timothy M., 1st Lieut., Hazleton, Camp Blanding, Fla.
*Dyson, John M., 1st Lieut., Hazleton.
*Fluegel, Gerald N., Captain, Wilkes-Barre.
*Friend, Arthur, 1st Lieut., Dupont, Camp Blanding, Fla.
Goeringer, Claire F., 1st Lieut., Wilkes-Barre.
Green, Arthur H., Jr., 1st Lieut., Wilkes-Barre.
*Gribovsky, Emile, 1st Lieut., Kingston, Indiantown Gap, Pa.
*Grohowski, A. L., 1st Lieut., Sugar Notch, Freeland, Pa.
*Horvat, Arthur J., 1st Lieut., Duryea.
*Jonas, Stephen A., 1st Lieut., Nanticoke, Ft. Belvoir, Va.
Krajeski, Delphin S., 1st Lieut., Wilkes-Barre.
*Lakatos, Nicholas R., 1st Lieut., Nanticoke, Ft. Geo. G. Meade, Md.

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* Indicates member.

*Letcher, Charles W., Lieut., Wilkes-Barre, Naval Reserve Aviation Base, Philadelphia, Pa.
Maguda, Thomas A., 1st Lieut., Sheatown.
*Martin, Joseph E., Kingston, Schuylkill Arsenal, Philadelphia.
Matikiewicz, Joseph P., 1st Lieut., Nanticoke, Ft. Geo. G. Meade, Md.
*Rachunis, Michael L., 1st Lieut., Glen Lyon, Indiantown Gap, Pa.
*Robins, Isadore M., 1st Lieut., Luzerne, Ft. Geo. G. Meade, Md.
Schiowitz, Albert, 1st Lieut., Wilkes-Barre.
Stanley, Thomas Z., 1st Lieut., Wilkes-Barre.
Staskiel, Louis J., Jr., 1st Lieut., Glen Lyon.
*Sussman, Nathan, 1st Lieut., Hazleton, Ft. Geo. G. Meade, Md.
Washko, Peter J., 1st Lieut., Edwardsville.

LYCOMING COUNTY

*Baker, Harold F., Lieut. Col., Muncy, Army Medical Center, Washington, D. C.
*Brandon, Thomas C., 1st Lieut., Williamsport, Edgewood Arsenal, Md.
*Buzzard, Harry W., 1st Lieut., Williamsport, Ft. Belvoir, Va.
*Converse, James M., 1st Lieut., Montoursville, Ft. Eustis, Va.
*Curtis, Morris W., Captain, Williamsport, Langley Field, Va.
*Faries, George B., Captain, Lewisburg, Camp Shelby, Miss.
*Finklestein, Herman, Captain, Williamsport, Charlotte Air Base, Charlotte, N. C.
Hall, Collins F., 1st Lieut., Williamsport, Camp Lee, Va.
*Jacobson, Philip, 1st Lieut., Williamsport, Camp Shelby, Miss.
*Lyon, Edward, Jr., 1st Lieut., Williamsport, Edgewood Arsenal, Md.
*Stutzman, Clyde M., Jr., 1st Lieut., S. Williamsport, Camp Lee, Va.
*Wilcox, Wilfred W., Captain, Montoursville, Indiantown Gap, Pa.

McKEAN COUNTY

*Cleland, Charles Edward, Captain, Kane, New Cumberland, Pa.
*DeWoody, Gerald M., Captain, Duke Center, Camp Bragg, N. C.
*Donaldson, Robert D., 1st Lieut., Kane.
*Garvin, Luke D., 1st Lieut., Bradford, Indiantown Gap, Pa.
*Hellman, Leo A., Captain, Port Alleghany, Camp Shelby, Miss.
*Hockenberry, Ralph E., 1st Lieut., Smethport, Camp Blanding, Fla.
*McGrail, Matthew A., Lieut., Bradford, Marine Hospital, Quantico, Va.

MERCER COUNTY

*Chervinko, Joseph, 1st Lieut., Farrell, Indiantown Gap, Pa.
*Donley, Donald, Captain, Sharon, Ft. Story, Va.
*Gleeson, George L., 1st Lieut., Sharon, Washington, D. C.
*Rankin, Paul H., 1st Lieut., Sharon, Indiantown Gap, Pa.
*Wassell, George C., 1st Lieut., Sharon, Indiantown Gap, Pa.

MIFFLIN COUNTY

*Kimmel, Henry A., 1st Lieut., Lewistown.
*Schultz, Samuel K., Captain, Lewistown.

MONROE COUNTY

*Hampton, Louis J., 1st Lieut., Stroudsburg, Camp Lee, Va.
*Kohn, David F., 1st Lieut., Mt. Pocono, Ft. McClellan, Ala.
*Metzgar, Thomas I., Captain, Stroudsburg, Ft. Leavenworth, Kan.
*Reese, Evans C., 1st Lieut., E. Stroudsburg, Ft. Belvoir, Va.
*Sloan, Malachi W., Jr., 1st Lieut., E. Stroudsburg, Philadelphia Navy Hospital (volunteered services).

MONTGOMERY COUNTY

*Bland, George W., Major, Ardmore, Indiantown Gap, Pa.
*Bone, Charles A., 1st Lieut., Glenside.
Breslin, John F., Captain, Bridgeport.
Chain, William T., 1st Lieut., Narberth, Ft. Belvoir, Va.
*Cleaver, Edgar E., 1st Lieut., Palm, Camp Blanding, Fla.
*Kochenderfer, Thomas T., 1st Lieut., Arcola.
*Lever, Haseltine S., Jr., 1st Lieut., Abington, Ft. Geo. G. Meade, Md.
Morris, Edward S., 1st Lieut., Wyncote, Ft. Story, Va.
*Parker, William S., Major, Bryn Mawr, Camp Shelby, Miss.
*Place, Elmer R., Captain, Skippack, Ft. Eustis, Va.
*Sommers, Elmo B., 1st Lieut., Norristown, Camp Blanding, Fla.
*Van Buskirk, Frederick W., 1st Lieut., Pottstown, Hampton, Va.
Wennerstein, Jack R., 1st Lieut., Pottstown.

MONTOUR COUNTY

*Janjigian, Edward R., 1st Lieut., Danville, Walter Reed Hosp., Washington, D. C.
Pratt, William C., 1st Lieut., Danville, Ft. Leonard Wood, Rolla, Mo.

NORTHAMPTON COUNTY

Skinner, William, Captain, Easton, Camp Stewart, Ga.
*Smith, Lewis A., Captain, Pen Argyl, Ft. Geo. G. Meade, Md.
*Thompson, Frank V., 1st Lieut., Nazareth, Langley Field, Va.
*Underwood, Harry B., Easton, Camp Lee, Va.
*Ward, Frederick W., 1st Lieut., Easton, Camp Stewart, Ga.

NORTHUMBERLAND COUNTY

*Allen, Robert E., Major, Mt. Carmel, Ft. Shelby, Miss.
*Bulfamonte, Joseph C., 1st Lieut., Shamokin, Carlisle Barracks, Pa.
Falker, John M., 1st Lieut., Mt. Carmel.

PERRY COUNTY

None reported to date.

PHILADELPHIA COUNTY

Arnao, James, 1st Lieut., Philadelphia, Camp Shelby, Miss.
*Beck, Morton S., 1st Lieut., Philadelphia.
Berg, Philip, Jr., 1st Lieut., Philadelphia.
Bidus, Leo Marion, 1st Lieut., Philadelphia.
*Bloom, Rudolph, Colonel, Philadelphia, Carlisle, Pa.
*Blumberg, Leon David, 1st Lieut., Philadelphia.

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* Indicates member.

Brylawski, Michael, 1st Lieut., Philadelphia.
Capalbo, Sylvester Alfred, 1st Lieut., Philadelphia.
Cappola, Michael Thomas, Jr., 1st Lieut., Philadelphia.
Carp, Albert Alexander, 1st Lieut., Philadelphia.
*Cherkasky, Martin, 1st Lieut., Philadelphia, Ft. Geo. G. Meade, Md.
*Close, Henry Pletcher, 1st Lieut., Germantown, Indiantown Gap, Pa.
*Corff, Meyer, Major, Philadelphia, Ft. Story, Va.
*Devlin, Laurence P., Captain, Philadelphia.
*Dickinson, Everett H., 1st Lieut., Philadelphia.
*DiSario, Anthony, 1st Lieut., Philadelphia, Ft. Benning, Ga.
*Downs, T. McKean, Philadelphia, U. S. Navy.
*Ewan, John R., 1st Lieut., Philadelphia, Aberdeen, Md.
*Feinman, Jack Irwin, 1st Lieut., Philadelphia, Ft. McClellan, Ala.
*Fetter, Ferdinand, Lieut., Philadelphia, Naval Hospital, Philadelphia.
*Fliegelman, Maurice Teller, 1st Lieut., Philadelphia, Ft. Benning, Ga.
*Frankel, Leon A., 1st Lieut., Philadelphia, Ft. Dix, N. J.
Gaev, Samuel David, Captain, Philadelphia.
*Gansman, David Henry, 1st Lieut., Philadelphia, General Dispensary, N. Y.
*Gilman, Robert Louis, Philadelphia, Medical Corps, U. S. Navy.
*Goldberg, Harold Ernest, 1st Lieut., Philadelphia, Ft. McClellan, Ala.
Gordon, James Harrison, Captain, Philadelphia.
Griffiths, John Owen, 1st Lieut., Philadelphia.
*Griggs, Oscar B., Captain, Philadelphia, Camp Jackson, S. C.
*Grobman, Irving L., 1st Lieut., Philadelphia, Ft. Geo. G. Meade, Md.
Haines, John Wister, 1st Lieut., Philadelphia.
*Hamrick, Hayward Russell, 1st Lieut., Philadelphia, Indiantown Gap, Pa.
*Hanna, Edward A., Philadelphia, Indiantown Gap, Pa.
Hansell, Robert J., Captain, Philadelphia.
*Harkins, Herbert P., Philadelphia, Naval Hospital, Philadelphia.
*Herr, Bayard Sultzbach, Jr., Captain, New York City, Station Hosp., Ft. Dix, N. J.
Hession, Henry Monroe, 1st Lieut., Philadelphia, Camp Blanding, Fla.
*Hinkson, DeHaven, Major, Philadelphia, Ft. Bragg, N. C.
*Hoffstein, Louis D., 1st Lieut., Philadelphia, Indiantown Gap, Pa.
Homan, James B., 1st Lieut., Philadelphia.
Horwitz, Ellis Berry, Lieut. Comdr., Philadelphia, Naval Hospital, Philadelphia.
Imbriglia, Joseph Ettore, 1st Lieut., Philadelphia, Ft. McClellan, Ala.
*Isard, Harold J., Philadelphia, Medical Corps, U. S. Navy, Quantico, Va.
*Jamison, Andrew M., Jr., 1st Lieut., Ft. Jackson, S. C.
Kaplan, Albert Jordan, 1st Lieut., Philadelphia.
*Kaplan, Louis, Philadelphia.
*Kaufman, Abraham Saul, 1st Lieut., Philadelphia, Ft. Bragg, N. C.
*Kitchell, James Roderick, 1st Lieut., Philadelphia, Indiantown Gap, Pa.
Knecht, Edward M., 1st Lieut., Philadelphia.
Koebert, Martin Joseph, 1st Lieut., Philadelphia.
Krausz, Martin Richard, 1st Lieut., Philadelphia.
Lawlor, John Martin, 1st Lieut., Philadelphia.
Lawry, Lee Llewellyn, Jr., 1st Lieut., Philadelphia.
Leone, Peter Pascal, 1st Lieut., Philadelphia, Camp Blanding, Fla.
Lichtenstein, George Maurice, 1st Lieut., Philadelphia.
Lipman, Bernard Lewis, 1st Lieut., Philadelphia.
*Livingood, Clarence S., 1st Lieut., Philadelphia, Indiantown Gap, Pa.
*Lorenz, George, Jr., Philadelphia, Submarine Base, Coco Solo, Canal Zone.
McClintock, John Laughlin, 1st Lieut., Philadelphia.
*MacNeal, Herbert P., 1st Lieut., Philadelphia, Ft. Monroe, Va.
*Manley, John G., Lieut. Comdr., Philadelphia, Norfolk Naval Hosp., Norfolk, Va.
*Martin, William Lemmon, Commander, Philadelphia, Naval Hospital, Philadelphia.
*Mason, James B., Major, Philadelphia, Indiantown Gap, Pa.
*Merlin, Albert A., 1st Lieut., Philadelphia.
*Mogan, Christopher J., Captain, Philadelphia, Ft. Geo. G. Meade, Md.
Morgan, David Reynolds, Major, Philadelphia, Ft. Belvoir, Va.
*Muckle, Craig W., Captain, Haverford.
Naegeli, Frank Delee, Jr., 1st Lieut., Philadelphia, Ft. Eustis, Va.
*Nagler, J. Herbert, 1st Lieut., Philadelphia, Station Hosp., Ft. Monmouth, N. J.
*Nardone, Anthony A., Captain, Philadelphia, Indiantown Gap, Pa.
*Noble, Nathan Morton, 1st Lieut., Philadelphia, Camp Pendleton, Va.
Northop, Richard Francis, 1st Lieut., Philadelphia.
*Page, Henry F., Lieut., Philadelphia, Naval Hospital, Philadelphia.
*Pepper, Dickinson S., 1st Lieut., Philadelphia, Indiantown Gap, Pa.
Perri, Frank Adrian, 1st Lieut., Philadelphia.
*Persing, Dan Hollopeter, 1st Lieut., Philadelphia, Ft. Geo. G. Meade, Md.
*Raines, Herbert Smith, 1st Lieut., Philadelphia, Ft. Monroe, Va.
*Richardson, Fred M., 1st Lieut., Philadelphia, Charleston, S. C.
*Romagosa, Samuel Sample, Captain, Philadelphia, Ft. Geo. G. Meade, Md.
*Romanow, Peter W., 1st Lieut., Philadelphia, Indiantown Gap, Pa.
Rosen, Samuel Clarence, 1st Lieut., Philadelphia.
Rothstein, Martin Mayer, 1st Lieut., Philadelphia.
Schiff, Bencel L., 1st Lieut., Philadelphia.
*Schofield, Frederick S., Philadelphia, U. S. Navy.
Schofield, John Thomas, Jr., 1st Lieut., Philadelphia.
Schwab, Carl Leopold, 1st Lieut., Philadelphia, Camp Lee, Va.
Schwab, John Edward, 1st Lieut., Philadelphia.
Sherman, Victor, 1st Lieut., Philadelphia, Ft. Story, Va.
*Siegel, Bernard, 1st Lieut., Philadelphia, Camp Pendleton, Va.
*Siegal, Edward I., 1st Lieut., Philadelphia.
*Sigmond, Henry I., Major, Philadelphia, Indiantown Gap, Pa.
Sims, Arthur Isaac, 1st Lieut., Philadelphia, Indiantown Gap, Pa.
*Sirken, Joseph G., 1st Lieut., Philadelphia, Walter Reed Hospital, Washington, D. C.

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* Indicates member.

Smolens, Nathan Morris, Captain, Philadelphia, Hampton, Va.
Sniscak, John Michael, 1st Lieut., Philadelphia.
Sones, Maurice, 1st Lieut., Philadelphia.
Spector, Martin, 1st Lieut., Philadelphia, Ft. Jackson, S. C.
Spritzler, Ramon J., 1st Lieut., Philadelphia.
*Stein, Arthur J., 1st Lieut., Philadelphia.
*Sterling, Julian Alexander, 1st Lieut., Philadelphia, Ft. Geo. G. Meade, Md.
*Thorner, Melvin Wilfred, Captain, Philadelphia, Randolph Field, Tex.
*Trueman, Robert H., 1st Lieut., Philadelphia, Charleston, S. C.
*Urbaitis, John C., Captain, Philadelphia, Ft. Monroe, Va.
*Violetti, Raffaele L., 1st Lieut., Philadelphia.
Wainer, Amos S., 1st Lieut., Philadelphia.
*Weaver, Harry S., Jr., Lieut., Philadelphia, Fourth Naval Dist. Headquarters, Philadelphia.
Wong, James Sin Fook, Captain, Philadelphia.
*Woodhouse, Samuel L., Jr., Captain, Philadelphia, Gen'l. Dist., Baltimore, Md.
Wright, Burchard E., Jr., Captain, Philadelphia.
Zox, Maurice Levi, 1st Lieut., Philadelphia.

POTTER COUNTY

*Hurok, Oscar J., 1st Lieut., Galeton.

SCHUYLKILL COUNTY

*Boyer, Gouverneur H., Sarasota, Fla., Ft. Myers, Fla.
Delp, Charles W., Captain, St. Clair.
Flaig, Julian V., Captain, Pottsville.
*Haight, Warne L., Lieut., Pottsville, U. S. Naval Hosp., Philadelphia.
*Kapo, Peter J., Major, Mahanoy City, Camp Lee, Va.
*Melnicove, Sidney, 1st Lieut., Pine Grove, Indiantown Gap, Pa.

SOMERSET COUNTY

*Brant, Glen Z., 1st Lieut., Berlin, Camp Lee, Va.
*Large, John S., 1st Lieut., Somerset, Camp Blanding, Fla.
*Saylor, Clyde L., 1st Lieut., Meyersdale, Camp Lee, Va.
*Spencer, James D., 1st Lieut., Somerset.

SUSQUEHANNA COUNTY

*Bishop, Charles J., Captain, Hop Bottom, Camp Lee, Va.
*Smith, Forrest F., Captain, Hallstead, Indiantown Gap, Pa.

TIOGA COUNTY

*Butler, William S., 1st Lieut., Wellsboro, Ft. Eustis, Va.
*Doane, John H., Lieut. Col., Mansfield, Indiantown Gap, Pa.
*Laird, Archibald, Major, Wellsboro, Harrisburg Airport, Harrisburg.
*Long, Michael R., Lawrenceville.
*White, William F., Wellsboro.

VENANGO COUNTY

*Brehm, William F. Jr., Captain, Franklin, Indiantown Gap, Pa.
*Gabreski, Thaddeus S., 1st Lieut., Oil City, Camp Shelby, Miss.
*McCandless, Garrett C., Franklin, Captain, 1376 Sheridan St., N. W., Washington, D. C.
*Owczykowsky, Bernard John, 1st Lieut., Oil City, Ft. Geo. G. Meade, Md.
*Votaw, Frederick Lee, 1st Lieut., Pittsburgh.

WARREN COUNTY

*Crevello, Albert J., Lieut. j. g., Warren, U. S. Naval Hosp., Philadelphia.
*O'Connor, Arthur J., Jr., 1st Lieut., Warren, Ft. Monroe, Va.
*Templeton, Frederick G., Warren, 1st Lieut., Ft. Belvoir, Va.
*Thompson, John E., 1st Lieut., Youngsville, Ft. Geo. G. Meade, Md.

WASHINGTON COUNTY

*Alexander, Arthur S., 1st Lieut., Washington, Ft. Belvoir, Va.
*Bair, Victor W., 1st Lieut., Belle Vernon, Camp Lee, Va.
*Chalfant, Chads O., 1st Lieut., Donora, Ft. Belvoir, Va.
Clark, Walter S., Jr., 1st Lieut., Burgettstown.
*Hazlett, Esten L., Captain, Canonsburg, Indiantown Gap, Pa.
*Hindman, Thomas A., 1st Lieut., Burgettstown, Ft. Monroe, Va.
*Hughey, Charles M., 1st Lieut., McDonald, Indiantown Gap, Pa.
*McBurney, Harold H., 1st Lieut., Washington, Indiantown Gap, Pa.
*Martin, Lee B., 1st Lieut., Burgettstown, Ft. Belvoir, Va.
*Riggle, Paul P., Captain, Washington, Ft. Myer, Va.
Rittenhouse, Emory A., 1st Lieut., Monongahela, Ft. Myer, Va.
Riva, Humbert L., 1st Lieut., Charleroi.

WAYNE-PIKE COUNTIES

*Shovlin, John P., 1st Lieut., Waymart, Ft. Geo. G. Meade, Md.

WESTMORELAND COUNTY

*Bronk, Henry N., Captain, Jeannette, Camp Lee, Va.
Bronk, Theodore T., 1st Lieut., Irwin, Camp Lee, Va.
*Campana, Frederick T., Captain, Monessen, Camp Lee, Va.
*Liska, John R., 1st Lieut., Greensburg, Camp Lee, Va.
*McSteen, Arthur J., Captain, West Newton, Indiantown Gap, Pa.
Markle, Cyrus P., Jr., 1st Lieut., West Newton, Ft. Eustis, Va.
Nicolette, Anthony J., 1st Lieut., Mt. Pleasant.
*Shaw, Harry E., Captain, Donegal, Indiantown Gap, Pa.
*Shepler, Joseph R., 1st Lieut., West Newton, Camp Lee, Va.
*Snyder, Charles Piper, 1st Lieut., Manor, Ft. Geo. G. Meade, Md.
Sutton, James A., 1st Lieut., Avonmore.

WYOMING COUNTY

None reported to date.

YORK COUNTY

Adams, Albert, flight surgeon, 1st Lieut., Hanover.
*Dunkelberger, John A., 1st Lieut., Wrightsville, Ft. Bragg, N. C.
*Ensminger, Chalmers D., Captain, York, Ft. Geo. G. Meade, Md.
*Shear, M. Heine, Austin, Texas, Station Hospital, Barksdale Field, La.
*Sneddon, John, Jr., 1st Lieut., Hanover, Camp Lee, Va.
White, Gilbert W., Captain, East Prospect.

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* Indicates member.

SPECIAL PROGRAM—MEDICAL EXAMINATION OF SELECTEES

The Pennsylvania Committee on Medical Preparedness with the approval of the Board of Trustees and the co-operation of the 1941 Committee on Scientific Work is arranging a 90-minute program at the Pittsburgh Session of the society "for the purpose of providing information and opportunity for discussion of subjects related to the physical examination of National Registration Act selectees." This special program will be given in the Hotel William Penn on Tuesday, Oct. 7, from 9:30 to 11 a. m.

1941 SECTION ON CLINICAL LABORATORY MEDICINE

The Section on Clinical Laboratory Medicine will have two sessions, both on Tuesday, Oct. 7. The morning session will be devoted to papers of special interest to the pathologist, while in the afternoon they will be primarily of interest to the roentgenologist. However, in constructing the section program, subjects were selected which should appeal to general practitioners as well.

The program is quite diversified, but the subjects are timely and practical.

On Tuesday morning the program will consist of papers on Banti's disease, the relation of hormones to cancer, intern training, aspiration pneumonia, the evaluation of the serologic test for syphilis, blood chemistry, and neuropathology.

On Tuesday afternoon the radiologic subjects for discussion will include the effect of irradiation on inflammation, calcification within the gallbladder, the renal digestive reflex, and changes in irradiated skin.

Dr. Charles A. Waters, Baltimore, Md., will be the guest speaker of the section. The title of his address, which is scheduled for Tuesday afternoon, is "Has Preoperative Irradiation a Place in the Treatment of Renal Tumors?" Dr. Waters is especially well qualified to discuss this subject.

1941 SECTION ON EYE, EAR, NOSE, AND THROAT DISEASES

The Eye, Ear, Nose, and Throat Section will continue this year with two sessions. The first meeting will be held on Wednesday afternoon, Oct. 8, and will be devoted to ophthalmology; the afternoon of Oct. 9 will be devoted to otolaryngology. The program will probably appear rather short—4 papers in ophthalmology and 5 in otolaryngology. This arrangement has been made so that ample time will be had for general discussion.

In ophthalmology the following papers should be of interest: recent improvements in the treatment of retinal separation, recent advances in cataract surgery, and the analysis of fundus pathology by photographs. These subjects will be presented by able and well-known essayists. The guest speaker is well known to all members of the section, Dr. William L. Benedict, of Rochester, Minn., who will present "The Surgical Treatment of Glaucoma."

In the otolaryngologic session the indications for tonsillectomy will be presented by a well-known authority and is a timely subject which merits the attention of all otolaryngologists. Sinus infections, treatment with silver picrate, malignancy of the nasal accessory sinuses, and chemotherapy in upper respiratory tract infections will also be presented. The guest speaker, Dr. Thomas C. Galloway, of Evanston, Ill., will present a subject that has much new material for thought, "Upper Respiratory Tract Obstructions and Their Secondary Effects."

SHALL THERE BE BOWLING?

Dr. Arthur H. Gross, 344 Lincoln Ave., Bellevue, Pa., chairman of the Local Committee on Arrangements in connection with the 1941 convention of The Medical Society of the State of Pennsylvania to be held in Pittsburgh, Oct. 6 to 9, is in receipt of a communication from a member of the Lackawanna County Medical Society regarding the possibility of the development of bowling teams and contests to be consummated during Monday preceding the opening of the scientific sessions on Tuesday morning. Dr. Gross would appreciate hearing from any member of the State Medical Society who might be sympathetic to this proposal.

PUBLICIZING DIABETES

To Secretaries of Component County Medical Societies.

Fellow Secretary:

(1) The Board of Trustees of The Medical Society of the State of Pennsylvania at its regular meeting on May 13, 1941, gave due consideration to a request from our State Society's Commission on Diabetes looking to approval of the current nation-wide instructional program of the Metropolitan Life Insurance Company on the subject of "Diabetes."

Our commission, after a careful review of the proposed printed material to be distributed personally and to be published in national magazines, expressed the opinion that this will be helpful both to physicians and patients.

This program is already in effect in New York State with the approval of the New York State Medical Society.

The Commission on Diabetes believes that this endeavor will accomplish much in awakening the public concerning diabetes, resulting in earlier diagnoses and more effective management of diabetes patients, and our Board of Trustees voted support.

(2) The Board of Trustees also gave approval to a proposal of the Pennsylvania State Nurses' Association, through its Institute Committee, to approach the disease control committees of our component county medical societies for their co-operation in connection with programs or institutes for instructing the public on subjects of health and disease control.

(3) The Board of Trustees also approved a proposal of the Department of Health of Pennsylvania for co-sponsorship in the department's "First Pennsylvania Health Essay Contest," for public and parochial high school students throughout Pennsylvania, the subject being "Food for Health."

The above is forwarded to you for your information and guidance.

Sincerely yours,
Walter F. Donaldson, *Secretary.*

May 27, 1941.

To Members of Commission on Diabetes of MSSP and Chairmen of County Society Diabetes Committees.

My Dear Doctor:

The Metropolitan Life Insurance Company is now in an active campaign to spread knowledge generally concerning diabetes mellitus through their established channels as well as dignified avenues through nationally known magazines.*

Your State Medical Society Commission on Diabetes have studied the program carefully and give it their approval. The Board of Trustees of the State Society has voted its support to the project, and we recommend this educational program for your study and guidance. Under separate cover you will receive pamphlets and materials that the insurance company proposes to use in appropriate places.

Your Commission on Diabetes would greatly appreciate your co-operation in this matter and suggests that whenever possible meetings be scheduled on the subject of diabetes not only before your county society but at the request of interested lay groups in the community. The commission has prepared a colored film on diabetes which can be used effectively before selected groups and will on request aid in the development of local programs which have received your O. K. The Metropolitan Life Insurance Company also has considerable material prepared that will make the preparation for meetings considerably easier.

We hope that this educational program will have the support of the members of your county society and that it will stimulate a more active interest in the problems of persons in Pennsylvania suffering from diabetes.

Very truly yours,
J. West Mitchell, *Chairman,*
Commission on Diabetes.

June 10, 1941.

LIBRARY NEWS

Members desiring to borrow reprints from the library should send 25 cents in stamps to cover the postage and part of the expense of collecting the material. Address the Librarian, 230 State St., Harrisburg, Pa. Each package may be kept for a period of 14 days.

The library will be glad to send packages to our physicians who have been called to military service. Simply write, giving your new address. Read the article in this Journal entitled "Research Not Grounded."

Between May 1 and June 1 the following borrowers made use of the library:

Maurice S. Jacobs, Philadelphia—*Coronary Thrombosis* (10 articles).

Dale C. Stahle, Harrisburg—*Pneumonia* (1 article).

Harvey E. Thorpe, Pittsburgh—*Cataract Extraction* (12 articles).

C. L. Palmer, Pittsburgh—*Licensure* (2 articles).

Hope T. M. Ritter, Allentown—*Euthanasia* (2 articles).

Albert B. Berkowitz, Pittsburgh—*Therapy of Varicose Veins* (37 articles).

Myer W. Rubenstein, Pittsburgh—*Therapy of Scleroderma* (4 articles); *Acanthosis Nigricans* (3 articles); *Parathyroid Tetany* (10 articles).

Laurrie D. Sargent, Washington—*Heart Diseases* (5 articles).

Frederick A. Miller, Pittsburgh—*Agranulocytic Angina* (18 articles).

Francis F. Hart, Philadelphia—*Disseminated Sclerosis* (14 articles).

Belford C. Blaine, Pottsville—*Vitamin B* (25 articles).

Bernard Caplan, Lebanon—*Pneumoconiosis* (4 articles).

Lester H. Perry, Harrisburg—*Licensure* (3 articles).

Herman L. Rudolph, Reading—*Sarcoid Tumors* (10 articles); *Echinococcus of the Lungs* (10 articles).

Samuel A. Rulon, Jr., Phoenixville—*Whooping Cough Immunity* (18 articles).

C. Paul Reed, Indiana—*Inguinal Hernia* (26 articles).

Irvin W. McConnell, Carlisle—*Hydatiform Mole of the Uterus* (17 articles).

Harrison J. McGhee, Kane—*Therapy of Arthritis* (4 articles).

Edward Lyon, Jr., Edgewood (Md.)—*Migraine* (18 articles).

John Beck, New York—*Diseases of the Skin* (6 articles).

Ralph E. Bell, Media—*Therapy of Arthritis* (10 articles).

Darrell Blizzard, Hershey—*Asthma* (12 articles).

PAYMENT OF PER-CAPITA ASSESSMENT

The following payment of per-capita assessment has been received since Apr. 30. Figures in first column indicate county society numbers; second column, State Society numbers:

May 1	Schuylkill	142–154	8567–8579	$130.00
	Dauphin	214–220	8580–8586	70.00

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* See page 1226.

May 1	Butler	56–61	8587–8592	$60.00
	Erie	162, 164–167	8593–8597	50.00
2	Indiana	55	8598	10.00
5	Lackawanna	251	8599	10.00
	Northampton	153–155	8600–8602	30.00
	McKean	44–46	8603–8605	20.00
	Bucks	75–77	8606–8608	30.00
	Westmoreland	53–71, 74–126, 128–129	8609–8682	740.00
	Philadelphia	2312–2385	8683–8756	735.00
6	Greene	23–24	8757–8758	20.00
	Luzerne	325–337	8759–8764	60.00
	*Luzerne	329–334, 337		
7	Potter	14–16	8765–8767	25.00
	*Potter	9		
	Venango	50	8768	10.00
8	Northumberland	75–76	8769–8770	20.00
	Lawrence	75–76	8771–8772	20.00
9	Lackawanna	252	8773	10.00
	Lancaster	197–199	8774–8776	30.00
13	Wayne-Pike	22	8777	10.00
	Indiana	56	8778	10.00
	Delaware	248–249	8779–8780	20.00
13	Northumberland	77	8781	10.00
	Beaver	105	8782	10.00
14	Mercer	91	8783	10.00
	Greene	25	8784	10.00
	Cumberland	36	8785	10.00
15	Northumberland	78	8786	10.00
16	Luzerne	338	8787	10.00
17	Bedford	10–11	8788–8789	20.00
	Venango	51	8790	10.00
19	Susquehanna	18	8791	10.00
20	Mifflin	30–31	8792–8793	20.00
	Armstrong	48	8794	10.00
	Lackawanna	253	8795	10.00
	Erie	168	8796	10.00
22	Franklin	71	8797	10.00
23	Bedford	12–13	8798–8799	20.00
26	Fayette	114	8800	10.00
	Lehigh	163–166, 168–174	8801–8811	110.00
	Clinton	17–18	8812–8813	20.00
	Venango	52–53	8814–8815	20.00
	Allegheny	1447–1463	8816–8832	140.00
	Luzerne	339–340	8833–8834	20.00
29	Blair	107–108	8835–8836	20.00
	Bucks	78	8837	10.00
31	Northumberland	79	8838	10.00
	Northampton	156	8839	10.00
	Lycoming	27	8840	5.00

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to May 31:

New (38) and Reinstated (3) Members

Allegheny County

Alfred J. Haines .... Pittsburgh
Charles L. Mellon .... “
Regis A. Wolff .... “
John E. Kurtz .... Mayview
Peter G. Motta .... Carnegie

Delaware County

Elmer L. Douglas .... Darby
Vincent L. Marlin .... Marcus Hook

Erie County

Edward R. Mountain .... Erie

Franklin County

George S. Warner .... Shippensburg

Indiana County

Samuel Cohen .... Blairsville

Luzerne County

Richard J. Bonacci .... Hazleton
Walter J. McGuigan .... Wilkes-Barre
Gabriel S. Martyak .... Hazleton

Northampton County

Joseph A. Norris .... Easton

Northumberland County

Alexander B. Lukas-C .... Shamokin

Philadelphia County (Philadelphia)

Robert Blakemore Cadman
Morris Crane
John M. Alex. diSilvestro, Jr.
Basil Giletto
Frank W. Hauser
John Wade Howard
Walter S. Kaminski
Calvin Frederick Kay
George Pfahler Keefer
Christian J. Kleinguenther
John J. Mahaffey
David Milstein
Edward Ozellers
Thomas Roy Peyton
Sydney Waldman
Paul M. Wapner
Abraham J. Ziserman

(Reinstated) Henry A. Arkless.

Potter County

Alfred F. Domaleski .... Coudersport
Robert H. Kazmierski .... “

Susquehanna County

Robert T. Jones .... Harford

Venango County

Thomas E. Timney .... Franklin
Frederick L. Votaw .... “

Westmoreland County

Catherine J. Pucic .... Trafford

(r) Dan G. Bierer, Delmont; William M. Murray, Smethport (McKean Co.).

Removals (14), Transfers (3), Resignations (2), Deaths (17)

Allegheny County: *Removals*—R. Robert Cohen from Pittsburgh to Harrisburg; Samuel D. Evans from New York City to Pittsburgh. *Resignation*—Henry J. Gowaty, Camden, N. J. *Deaths*—Otto C. Gaub, Pittsburgh (Univ. Pa. '94), May 22, aged 68; John P. Laughlin, Pittsburgh (Univ. Pa. '97), May 23, aged 70; George Ross Winters, Pittsburgh (N. Y. Univ. Coll. Med. '99), May 1, aged 69.

Butler County: *Deaths*—M. Edward Headland, Butler (Starling Med. Coll. '89), May 19, aged 79; Clarence H. Willig, Mars (Temple Univ. '33), Apr. 24, aged 40.

Carbon County: *Transfer*—George A. Truckenmiller, Weatherly, to Luzerne County Society.

Chester County: *Removals*—John M. Mras from Embreeville to Trenton, N. J.; William D. Schrack from Phoenixville to New Cumberland.

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* Exempt on account of military service.

Clinton County: *Death*—Allen B. Painter, Mill Hall (Med.-Chi. Coll., Phila., '99), Apr. 23, aged 68.

Crawford County: *Transfer*—Samuel E. Hoke, Meadville, from Somerset County Society.

Delaware County: *Removal*—Mary J. Walton from Aldan to Norristown State Hospital, Norristown.

Indiana County: *Death*—Jason W. Carson, Indiana (Jeff. Med. Coll. '02), May 21, aged 80.

Lackawanna County: *Removal*—Maurice Marmelstein from Simpson to New York City. *Resignation*—J. Curtis Hellriegel, Buffalo, N. Y.

Lancaster County: *Removal*—William F. Hartman from Lancaster to Miami, Fla.

Luzerne County: *Removal*—John T. Millington from Wilkes-Barre to Lebanon. *Death*—Oscar E. Hofmann, West Hazleton (Jeff. Med. Coll. '91), Apr. 15, aged 72.

Montgomery County: *Removal*—Joseph Bitman from Pottstown to Wilmington, N. C.

Montour County: *Removal*—H. Glenn Wible from Danville to Monessen.

Philadelphia County: *Removals*—Thomas Anthes Campbell from Philadelphia to Reading; Lena Marie English from Philadelphia to Mercer; John G. Manley from Philadelphia to Norfolk, Va.; Dan Hollopeter Persing from Philadelphia to Laurel, Md. *Transfer*—J. Stanley Cohen, Philadelphia, from Lancaster County Society. *Deaths*—Paul B. Bender, Philadelphia (Jeff. Med. Coll. '15), May 13, aged 52; Pedro Juan Carreras, Philadelphia (Jeff. Med. Coll. '18), May 15, aged 49; Frank Joseph Frosch, Philadelphia (Hahn. Med. Coll. '08), May 14, aged 60; Bernard Kohn, Philadelphia (Univ. Pa. '99), May 21, aged 65; Samuel Mazor, Philadelphia (Med.-Chi. Coll., Phila., '14), Apr. 28, aged 51; Robert Miller, Philadelphia (Med.-Chi. Coll., Phila., '02), May 20, aged 67; Henry K. Mohler, Philadelphia (Jeff. Med. Coll. '12), May 16, aged 52; Harold G. Van Goldberg, Philadelphia (Univ. Pa. '00), May 11, aged 66.

Warren County: *Death*—Hubert J. Phillips, Bear Lake (Natl. Med. Univ. '96), May 15, aged 76.

Net gain in membership during May 22

CONTRIBUTIONS TO MEDICAL BENEVOLENCE FUND

The Committee on Medical Benevolence makes grateful acknowledgment of the following contributions to the fund:

Woman's Auxiliary, Lancaster City and County Medical Society	$50.00
Woman's Auxiliary, Delaware County Medical Society	125.00
Woman's Auxiliary, Washington County Medical Society	100.00
Woman's Auxiliary, Erie County Medical Society	200.00
Woman's Auxiliary, Allegheny County Medical Society	1324.95
Woman's Auxiliary, Fayette County Medical Society	50.00
Woman's Auxiliary, Westmoreland County Medical Society	400.00
Woman's Auxiliary, Beaver County Medical Society	60.00
Total contributions since 1940 report	$3633.80

"DOCTORS IN POLITICS"

In an article appearing in *Radiology,* Mac F. Cahal, executive secretary of the Inter-Society Committee for Radiology, urges physicians to "exert a more effective influence on political affairs than they do today." Mr. Cahal says:

"The word 'politics,' we insist, should be shorn of that malodorous connotation which has attached to it as a result of the dubious practices of some of the more notorious big-city machines. Politics, or political science, is concerned with the conscious definite purpose of society to establish authority and to determine its functions. By 'playing politics,' our illustrious forefathers conceived our form of government; they established its authority and determined its functions. The doctor, like every other good citizen, has inherited a responsibility to exercise the rights and privileges by which the individuals of the state control its public policy. His educational advantages increase his responsibility in this regard and render his neglect of duty more reprehensible than less fortunate followers in the civic community.

"It is in this enlightened meaning of the word that our political system is envied from abroad. It is this kind of responsible citizenship that prompted no less a cynic than G. B. Shaw to remark several years ago: 'You in America should trust to that volcanic political instinct which I have divined in you . . .'

"To protect the public welfare against politics in health, and to guard the profession of medicine against influences bound to retard its progress, doctors must take a more active interest in politics. No group outside the medical profession is competent to guide the policies of the government in matters of health. It is the responsibility of the medical profession to provide this guidance. Under our system of government there is one way, and only one way, that such responsibility can be exercised—and that is through political effort."

There is food for serious thought in these observations. In our lifetime there has never been a period when it has been of greater importance that physicians fulfill their obligation as citizens.—*Medical Annals of the District of Columbia.*

Is your county medical society helping to "change communities from what they are into what they ought to be"? This constitutes medical statesmanship! Read about it on page 1336.

Q. I've noticed that some cans are golden-colored on the inside. Why is that?

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(1) 1941. Canner 92, No. 12, Pt. 2, pages 78-81. 1936 Canner 82, No. 11, Pt. 2, pages 104-105.

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COUNTY SOCIETY REPORTS

ALLEGHENY

Apr. 15, 1941

John N. Frederick, of Pittsburgh, read a paper on **"The Physician's Rôle in the Production of Neuroses"** as follows:

The general practitioner and specialist frequently classify as neurotics patients with complaints which upon investigation prove to be functional. This field of the neuroses is perhaps the broadest in all medicine, as neurotics are found in all walks of life and at all ages. They develop in extroverts and introverts, in superior intellects, and in the mentally retarded. The psychobiologic basis for this is easily seen. The unborn child has no desires; the mother supplies its every want, protects and shields it from outside irritation. At birth the child is exposed to outside stimulations, and as development proceeds, conflicts occur between what the child wants and what it gets. Therefore, conflicts arise in the mental and physical spheres. No matter where he is, repressions and frustrations enter his daily life.

This paper is not meant to cover the psychoneuroses, hysteria, compulsion and obsessional neuroses, nor will traumatic neurosis be elaborated upon. The chief concern will be with the anxiety type. The cardinal symptom is anxiety and usually it is of somatic origin, and its source can be found at the physiologic level. This anxiety arising at such a level and manifesting itself in the psychic sphere then becomes a "free floating anxiety" which may attach itself to any idea and therefore appear to be of psychic origin.

Anxiety appears closely correlated with fear. Fear, however, is the emotion which corresponds to a danger threatening the organism from without, while anxiety corresponds to a danger which threatens the organism from within.

These patients exhibit many symptoms, chief among which are the following: general irritability, anxious expectation with attacks of palpitation, asthmatic attacks, dizziness, or paresthesia. Nocturnal frights, as awakening from a dream drenched in perspiration, and having air hunger are also seen. Phobias are ofttimes the outgrowth of these symptoms. Gastro-intestinal upsets are not uncommon.

Freud in his original paper stated: "In some cases of anxiety neurosis no etiology can readily be ascertained. It is noteworthy that in such cases it is seldom difficult to demonstrate a marked hereditary trait." Physicians may unknowingly play an important rôle in producing neurosis by their method of handling patients. This may be due to the physician's own psychobiologic make-up. One's medical training does not necessarily make one a normal, well-adjusted, emotional being. The reverse may be true. In medical school great stress is placed upon tissues, organs, physiology, and pathology; even special courses and lectures in nervous disorders and mental disease are given. Occasionally, someone attempts to correlate the various groups of lectures into a semblance of the psychosomatic organism, but too many times graduation occurs while the physician-to-be is still not clear in his own mind as to the patient as a personality. Let us suppose that the physician had no difficulties with his own physical or emotional reactions while in training and that throughout his whole life he was that rare specimen, "a completely adjusted personality." He still may be a menace.

Fewer Explanations—Less Confusion

With our dealings in diagnosis, disease entities, and technical terms we speak a language strange to laymen. True, the popular mind grasps certain words and terms and repeats them as if they were understood. Ask the layman to describe pneumonia, encephalitis, pertussis, or sulfapyridine and see how meager is his knowledge. The terms are known, but little else. His idea of illness and the conception of the physician are far apart. Frank discussion of a case ofttimes complicates the problem. No matter how intelligent the patient, he is easily confused and bewildered by our technical knowledge. Our words and ideas are misconstrued. Often a patient's relative in quoting the physician in reference to the illness makes a statement which is ridiculous or absurd.

Another mistake made by many physicians is that of being an alarmist. Any illness may prove fatal. All disturbances in the body need investigation. Thoroughness in the examination is to be commended. When the patient complains of an earache and is subjected to a complete blood count, a Wassermann test and blood chemistry, an x-ray, a urinalysis, and a neurologic examination, efficiency or thoroughness may have been carried out to a superlative degree. Dispensaries and clinics are sometimes guilty of such practices. The patient, meanwhile, develops considerable apprehension. Some workers order all types of investigations without having a clear thought of the exact purpose, hoping that somewhere a diagnosis can and will be arrived at.

Again, the physician may look with alarm at all complaints and unduly impress the patient. Head pain can be caused by a tumor or it may be of a type cured by a dose of salts. Credulity is found in all ages and many an intelligent human being is duped by a plausible story. Physicians, therefore, must weigh their words.

Surgeons, too, make a mistake when they pat themselves on the back by stating to the patient, "You are lucky that you are alive, the condition that appendix was in." The patient at first is pleased with the thought that she was unusual. The physician is pleased with his back-handed compliment. Later the patient hears of someone operated upon for appendicitis who died mysteriously. Since her appendix was so bad, is there a possibility that death may still occur to her? The surgeon is consulted, he laughs condescendingly, and states, "Nothing to worry about, go home and forget it." The patient cannot forget and the groundwork is laid for a future neurosis.

The physician who wishes to impress the patient with his grasp of the subject may also aid in producing anxiety. A lengthy explanation of factors in the illness, the present state of the disease, the possible complications and end results may produce a nightmare in the patient's mind. The patient may only understand a few terms and these may terrify him. It is well known how difficult it is to successfully treat a physician who is familiar with all the possible complications of an illness.

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Knowledge necessary for the proper handling of the patient and the household is necessary, but the fewer explanations the less confusion. You cannot impart in 10 or 15 minutes all the knowledge you have concerning a disease to someone who has not had the basic training.

Great care must be taken in our choice of words so as not to frighten our patients, as that can complicate illness and prolong it. Nurses in training are excellent examples of what a little knowledge of disease processes may do to the susceptible. The most pronounced extrovert turns his thoughts inward during illness and temporarily at least loses his "sense of values" so that a neurosis may be engrafted upon any illness.

Let us therefore look upon the patient as a whole, evaluating his psychic and physical make-up, before we prescribe, discuss, or elaborate upon the nature of his illness. Joseph A. Soffel, *Reporter.*

DELAWARE

Apr. 10, 1941

The monthly meeting was held at the Chester Hospital.

The scientific program followed a short business meeting. The president, Franklin E. Chamberlin, introduced the speaker of the evening, J. Marsh Alesbury, clinical professor of obstetrics at Temple University Medical School, whose subject was **"Bleeding in the Last Trimester of Pregnancy."**

Dr. Alesbury has been a member of the Maternal Mortality Commission of the Philadelphia County Medical Society for 10 years, and he stated that in each of the deaths resulting from hemorrhage in the last trimester of pregnancy brought before the commission for consideration and discussion there was an avoidable factor present—something which had not been done—usually an error in judgment or technic of the physician.

In part, Dr. Alesbury said that *bleeding of any kind in the last trimester of pregnancy is a danger signal. If the cause is not found and properly handled, it leads to the loss of the mother, the baby, or both. Bleeding in this period may be slight or massive; slight bleeding may become excessive. Regardless of whether the first show of blood is slight, fatal hemorrhage may occur at any time.*

Causes of bleeding during the last trimester of pregnancy may be (1) mature labor, or (2) some local condition of the cervix as erosion, carcinoma, or polyp. However, if a local condition of the cervix is present, there is usually bleeding before the last 3 months. The main cause of bleeding in this period is (1) placenta praevia, or (2) premature separation of a normally situated placenta.

It is most important for the physician to make a diagnosis of the cause of bleeding in a pregnant woman. In a case of placenta praevia a careful history is essential for diagnosis. The usual history is that the patient suddenly feels wet in the perineal region. She looks and finds blood. There is never any pain or discomfort; the bleeding may be slight or free. *Each case of painless and causeless bleeding in the last trimester of pregnancy should make the physician think of placenta praevia.*

In addition to the history, a careful external examination of the patient is necessary. The abdomen and uterus should be examined by palpation and auscultation; listen for fetal heart sounds and ascertain the tone of the uterus and the type of uterine contractions.

With placenta praevia, as a rule, the uterus is relaxed; bleeding originates in the lower part of the uterine canal and gives no stimulus for uterine contractions.

Recently, soft tissue x-ray technics have been used in diagnosis to locate the site of the placenta. The bladder is insufflated with some opaque substance; the site of the placenta can be seen on the x-ray film.

If the patient is in the hospital and the physician is still in doubt as to the diagnosis, a sterile vaginal examination should be made. *No vaginal examination, however, should be made in a placenta praevia patient unless the physician is prepared to meet the emergency by emptying the uterus immediately.* Severe hemorrhage may result from the examination.

The diagnosis of placenta praevia having been made by one or all of the above methods, the patient should be put to bed and, whenever possible, hospitalized. Preparation for emptying the uterus whenever the indication arises should be made. Sedation with morphine may be necessary if the patient is apprehensive. The patient should be kept in a recumbent position.

One of the most important things in the management of a placenta praevia patient is typing her blood and typing and obtaining blood donors. Dr. Alesbury feels that death in this condition is due to a lack of blood donors. By having this typing done when the patient enters the hospital, the physician is prepared to support the patient with blood transfusions if more bleeding occurs, or during operation, if this is necessary.

After the patient has been hospitalized and the blood typed, the treatment must be decided. This will be based on (1) the parity of the individual with placenta praevia (a primigravida may be treated more radically than a multigravida), and (2) the type of placenta praevia. *A definite diagnosis of the type of placenta praevia must be made before treatment can be instituted.* In some cases the membranes can be ruptured and the presenting fetal part will have a hemostatic action on the bleeding placenta. Progress made after rupture of the membranes depends on the relation of the placenta to the bony pelvic structure. In placenta praevia marginalis on the anterior or lateral cervical wall, the physician is justified in rupturing the membranes or using any other method of treatment.

It has been advised that all placenta praevia cases should be treated by cesarean section, but the consensus of opinion is that in a multipara with placenta praevia lateralis or marginalis good results can be obtained with other methods. However, if placenta praevia is diagnosed in a primigravida, cesarean section with blood transfusion will produce the best results.

Other recognized methods of treatment are:

1. Voorhees' induction. Contraindications to the Voorhees bag are: (a) Infection can be introduced into the uterus with the bag; and (b) traction on the distended bag may control the bleeding, but it frequently causes a faulty position of the presenting fetal part, i.e., brow or face presentation.

2. Braxton Hicks' version. This cannot be accomplished until the external cervical os is dilated (2 fingers). The object is to bring one fetal leg down with the foot and leg to the knee projecting from the vagina. This brings the buttocks into the cervix where it acts as a compressor. An objection to this method is that the necessary traction may sacrifice the life of the child.

3. Willett's forceps method. The membranes are rup-

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., **23,** 201 (March), 1939.

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tured and the scalp of the fetus is grasped by the forceps, traction is applied, and the fetal head produces pressure on the bleeding area.

The second important cause of bleeding during the last trimester is premature separation of the normally situated placenta, which may be embedded anywhere in the uterine wall. Causes of this condition are theoretic.

Diagnosis of premature placental separation is made from the history of acute, sharp pain. The pain may not continue, especially if the patient has an open hemorrhage, but if the bleeding is concealed or partial, continuous pain with the uterus in tonic contraction will result. *It is not always possible to make a differential diagnosis between placenta praevia and premature separation of the placenta.*

In this condition the physician should be ready for immediate emptying of the uterus and blood transfusion. The condition is serious if separation occurs before labor has begun. The treatment depends on (1) the gravida of the patient, and (2) the condition of the cervix. If the cervical os is dilated, Braxton Hicks' version, Voorhees' bag induction, etc., may be done. If the os is undilated, a cesarean section should be performed.

In conclusion, Dr. Alesbury said that any patient with vaginal bleeding in the last trimester of pregnancy is potentially a serious case and the physician should be prepared to treat the existing condition.

RUTH E. DUFFY, *Reporter.*

ERIE

May 13, 1941

At the regular monthly meeting at Hamot Hospital in Erie, Harold L. Foss, of Danville, discussed "The Causes Necessitating Secondary Operations in Biliary Tract Disease." He presented an analysis of 140 patients requiring secondary operations among 2485 patients treated for biliary tract disease at Geisinger Memorial Hospital.

Cholecystic disease is constantly progressive and readily curable in incipiency, but with the passage of time it is prone to produce serious and often fatal complications. The longer the delay the more serious becomes the necessary operation and the greater the likelihood of secondary operation becoming necessary.

Dr. Foss stated that treatment should be carried out early; it should always be surgical; to temporize with other means is dangerous and unjustifiable. The first operation must be a complete one, painstakingly conducted, with extirpation of the gallbladder in nearly every instance and with the thorough removal of all stones wherever they may be. He concluded that secondary operations become necessary because of incomplete procedures at the time of the primary laparotomy, or because of traumatism of the hepatic or common ducts at that time.

The number of gallbladders containing no stones—and possibly the site of no disease—removed or drained because of suggestive symptoms is unquestionably too high and is one of the direct causes of symptoms necessitating secondary operations for their relief. A gallbladder once drained is never thereafter a normal gallbladder.

In the afternoon Dr. Foss conducted a dry clinic at St. Vincent's Hospital when several cases from the surgical service were presented for discussion.

DELMAR R. PALMER, *Reporter.*

HUNTINGDON

May 8, 1941

The regular meeting of the society was held at the J. C. Blair Memorial Hospital, Huntingdon, at 3 p. m. Following the routine business discussion, a scientific paper entitled "The Rôle of the Adrenal Gland in the Genesis of Hypertension" was presented by George H. Bumgardner.

Dr. Bumgardner first pointed out that essential hypertension, a type of high blood pressure for which the cause is unknown, has become so common a disease of man that it behooves the medical profession to determine its cause. He stated that recent clinical workers in this field have shown interest in the relationship between glandular dysfunction and hypertension. He then discussed the various theories regarding the function of the adrenal glands, stating that there have been cases of high blood pressure in which the hormone or secretion of the glands has been demonstrated in the blood stream of the patients; there seems to be an association between tumors of the glands and high blood pressure.

The results of clinical and pathologic findings are much more indicative of hyperfunction of the adrenal cortex or outer portion of the gland playing the causative rôle in essential hypertension than the medulla or central part of the gland.

In recent years many advances have been made in the treatment of patients with hypertension by surgical methods. These consist in removing the nervous control to the gland, or the partial removal of the gland itself.

Dr. Bumgardner then presented several cases of tumor of the adrenal gland in which removal of the tumor cured the high blood pressure.

The paper was discussed by Drs. Keichline, Reiners, Orthner, and Steele. Dr. Bumgardner was given a rising vote of thanks for his excellent presentation of the subject. Walter B. Watkin, *Reporter*.

LEHIGH

May 14, 1941

The regular monthly meeting was held at the Lehigh Country Club, Allentown, at 9 p. m. President Paul C. Shoemaker presided and Gerald S. Backenstoe, chairman of the Program Committee, introduced the guest speaker, Richard A. Kern, professor of medicine, University of Pennsylvania Medical School. His topic was "Allergy." An abstract follows:

Fifteen per cent of people are hereditarily capable of becoming very allergic or have the ability to become strongly sensitive to factors in the environment; another 30 per cent are moderately allergic.

An individual born allergic remains so until he dies, but his sensitivity may vary. He may have eczema as a baby, ragweed coryza as a boy, asthma or migraine as a man, and eczema again as an old man. What he becomes allergic to is a matter of circumstance.

The factors in sensitivity are:

1. Excessive exposure to an excellent sensitizer, as ragweed.
2. Limited diet, whole wheat, milk, and eggs.
3. Intermittent overexposure to seasonal foods, as strawberries and shellfish.
4. Occupational chemicals which make the skin more vulnerable.

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An example of increasing sensitivity was given as follows: A man was stung by a yellow jacket and suffered a severe local reaction. One and a half years thereafter he had another sting, and besides an intense local reaction he developed generalized shock. His life was saved by an injection of adrenalin. An extract of yellow jackets was made and standardized for protein.

Moist surfaces absorb more protein. An example is the perspiring skin in contact with poison ivy.

A certain number of duodenal ulcers are considered allergic in origin, as is constipation or diarrhea in other patients. Veal from younger than 6-weak-old calves causes diarrhea in some patients. Mucous colitis with constipation may be caused by food sensitivity.

Drug sensitivity from aspirin, quinine, ipecac, and sulfanilamide is not uncommon. If a patient is sensitized to sulfanilamide, it is possible to change to sulfathiazole, or sulfapyridine. It is wise not to give the sulfonamide drugs for any other than serious infections, because of their sensitizing properties.

Migraine and epilepsy are considered by some to be allergic in origin. Treatment consists of avoidance of the sensitizing substance in any form and desensitization by the injection method if preferred. Oral administration is ineffective because of the inability to gauge the extent of protein absorbed into the blood stream.

Anna M. Ziegler, *Reporter.*

WYOMING

Apr. 9, 1941

The county medical society and its woman's auxiliary held their meeting at Tunkhannock.

Following lunch Peter P. Mayock, of the staff of Mercy Hospital, Wilkes-Barre, and trustee and councilor for our district, discussed "Many Urologic Problems That Confront the Physician." Dr. Mayock gave no formal paper, but rather led a discussion, with the members of the society asking questions to their hearts' content. It is from this type of meeting that we feel the most good accrues to the members.

Arthur B. Davenport, *Secretary.*

TWO NEW BLOOD BANK TECHNICS REPORTED

Two important contributions aimed at solving the problems of safely collecting, storing, and transporting blood plasma and the drying of blood plasma are reported in the May-June issue of *War Medicine,* published by the American Medical Association in cooperation with the Division of Medical Sciences of the National Research Council.

One provides for a simple and safe method of collecting, storing, and transporting blood plasma and the other involves the development of inexpensive equipment for drying the plasma. Both of them have wide applications in military medicine, particularly the former.

Elmer L. De Gowin, M.D., and Robert C. Hardin, M.D., Iowa City, report that they found that large glass flasks, such as are used in hospitals for the storing and administration by vein of various solutions, when equipped with a permanent rubber stopper allowing self-closing needle punctures, were eminently suitable for the collection, storage, and administration of whole blood or of blood plasma. The blood is collected in the flask by use of a standard needle valve piercing the rubber closure enabling a satisfactory mixture of the blood with a preservative fluid already in the flask. They say the flask can be completely filled except for a small air bubble and that when the needle is withdrawn the puncture hole in the rubber closes and that the flask can be immersed in ice water for long periods of time without leakage.

"An alternate method of filling the flask," they say, "without the needle valve and without previous evacuation of the flask, was devised. By this method suction was exerted in the flask during collection by insertion of a second needle, to which was connected a short piece of rubber tubing and a suction bulb."

They say it was found that blood could be safely administered directly from these flasks. Regarding the problems of the separation of plasma from the red blood cells, the 2 men say that it was realized that doing this "by centrifugation would be impractical when applied

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*JOSLIN, C. L. and HELMS, S. T., Arch. Ped., 54:533 (Sept.) 1937

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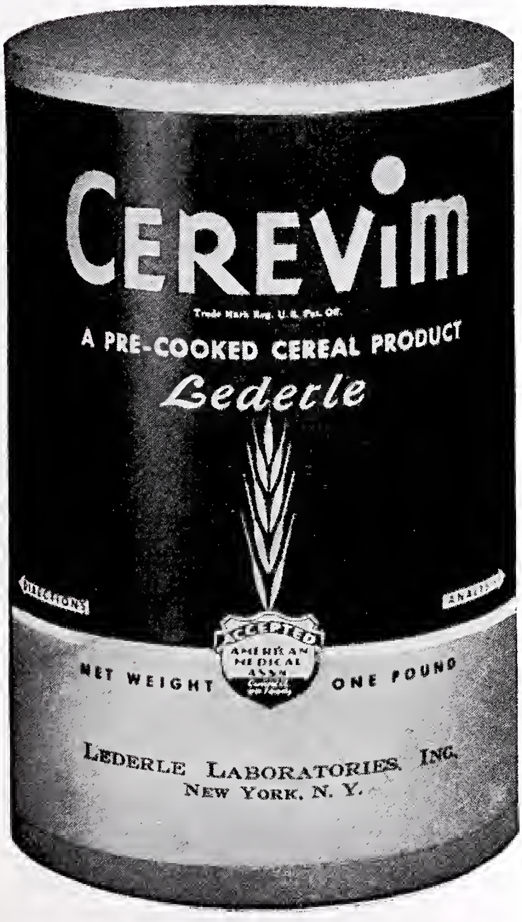
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to large scale production, since it would require the operation of many centrifuges of large capacity not now in existence. When the cylindric flasks containing the blood mixture are allowed to stand in the refrigerator, the erythrocytes in most bloods sediment in from 24 to 48 hours."

They then withdrew the plasma by siphon into another flask from which it could be transfused directly to a patient.

The question of storage of such flasks under proper refrigeration involved the problem of devising some means by which it would be indicated whether or not refrigeration had been properly observed during the history of the blood specimen.

With the assistance of 2 other men, a simple glass tube was designed into which was poured at room temperature an acid mixture which was found to have a melting point between 50 F. and 55.4 F. A red or blue glass bead was inserted which sank to the bottom. The mixture was then solidified by immersing the tube in an ice bath, and a similar glass bead was placed on top of the solid fatty acids. The tube was corked tightly and attached to the neck of the flask by a rubber band.

"If the tubing was heated to the melting point of the mixture for about 10 minutes," the 2 authors say, "the upper bead sank, and thereafter both beads remained together no matter in what position the two might be when the mixture was refrozen."

In the army, the 2 doctors say, the supply sergeant or other enlisted personnel could merely be instructed to discard all flasks in which the indicator showed the 2 beads to be together.

Experimentation by the 2 men resulted in the discovery that the commercial type of 10-gallon milk cans in common use in the United States were practical vehicles for portable refrigeration of the flask containing the stored plasma. Such a can accommodates 10 flasks of whole blood or plasma and sufficient cracked ice to maintain low temperatures for 12 to 24 hours. Insulating jackets are used on the cans.

"This method of refrigeration," the 2 physicians state, "is adapted to transportation by almost any type of vehicle or airplane. The only limiting factor is the accessibility of cracked ice or snow at the end of every 18 to 24 hour period during transportation. Any truck driver or member of an aircraft crew can be instructed to inspect the cans every 12 to 24 hours, depending on outside temperatures, and can be trusted with the duty of re-icing them when necessary. The refrigeration

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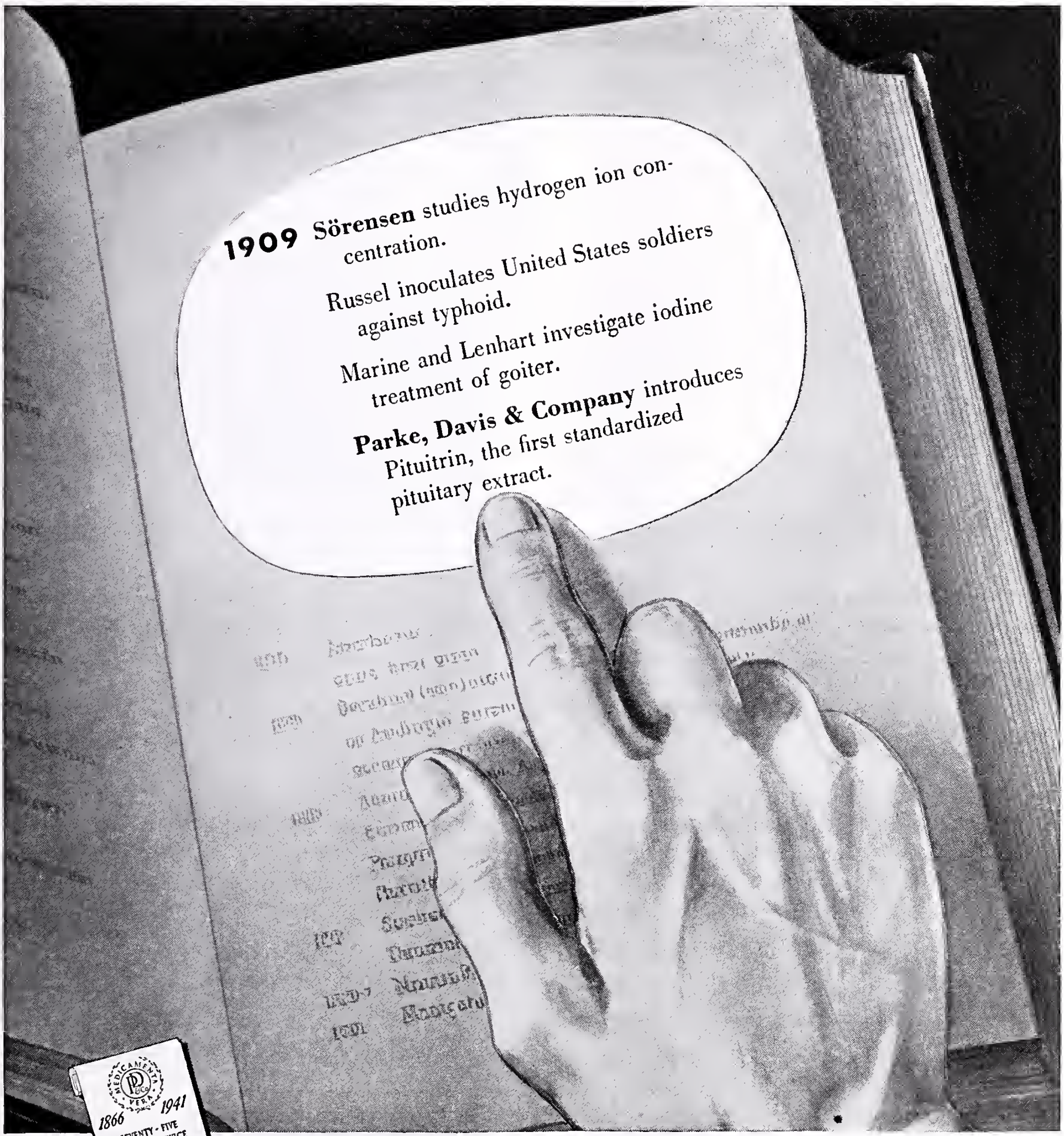

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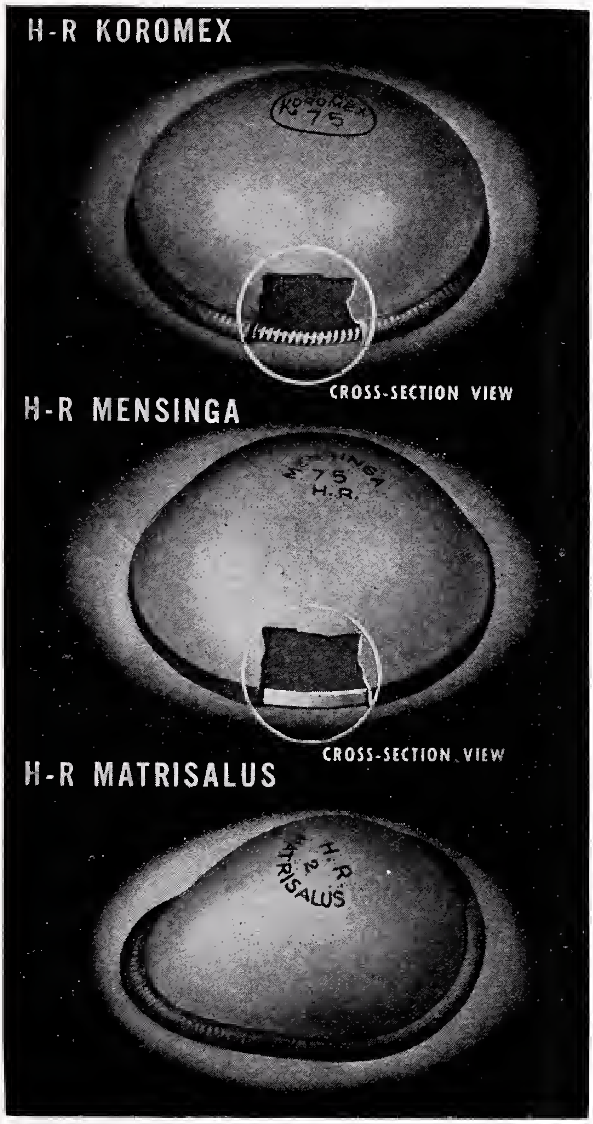

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THE WOMAN'S AUXILIARY

MRS. GEORGE C. YEAGER, *Editor*
1419 E. Susquehanna Avenue
Philadelphia, Pa.

PRESIDENT'S LETTER

Dear Friends:

Since my last letter to you, I have been entertained by 14 auxiliaries. The comradeship and friendliness in these groups have thrilled me. They have proven again that auxiliaries are strongest where friendship and good feeling exist. These qualities are necessary to any successful organization, but in the medical auxiliary they are of paramount value. Each auxiliary is as strong as its friendships and its friendly relations. If these are nourished with companionship, I have no fear for the success of any organization.

These visits have taken me over much of our beautiful state, and it has been a rare privilege. As a guest in many homes, I have realized more than ever the common experiences we all have in our everyday lives. The household problems, the telephone ringing, the children running in and out, the many demands made upon the head of the household—all these and more unite us in a common bond of mutual understanding and sympathy.

The extra demands now on our husbands' time at the induction centers require even more sacrifice of their companionship with us, but this again is our personal contribution to the defense needs. Each day will add new duties in this great problem of defense, but we will fit into the pattern because we are trained to do so.

However, now, more than ever, our loyalty should be maintained in our auxiliary. Under it we can correlate our efforts and do creditable work as an organization. Our contribution of health programs to the public is more necessary than ever. Where camps are near, the entertainment of the boys can be undertaken profitably. This will be appreciated by the many mothers whose sons are far away from home influences. While this defense program is in progress, we have a real opportunity to contribute valuable help as an organization. This will prove definitely our place among the womens' organizations of the country. Such splendid enthusiasm for our own work has been shown during the past year that any added responsibilities will meet with the same success.

Best wishes to you in all your undertakings.

Cordially,
Mary E. (Mrs. Maxwell) Lick,
President.

HEALTH EDUCATION

The following physicians and others have given health talks from October, 1940, to June, 1941:

Oct. 8, 1940, Woman's Auxiliary to the Philadelphia County Medical Society—Drs. Francis F. Borzell and Edward L. Bortz.

Oct. 28, 1940, South Philadelphia High School—Dr. M. Fraser Percival.

Nov. 7 to 16, 1940, Food Show—Convention Hall—Drs. Francis F. Borzell, Edward L. Bortz, Gilson C. Engel, Ruth Hartley Weaver, William D. Stroud, and Louis B. Laplace.

Nov. 12, 1940, Woman's Auxiliary to the Philadelphia County Medical Society—Drs. Philip F. Williams and Douglas MacFarlan.

Nov. 19, 1940, Woman's Club of Logan—Dr. Gilson C. Engel.

Nov. 20, 1940, Emmanuel Lutheran Guild—Dr. John V. Blady.

Nov. 20, 1940, Oak Lane Review Club—Dr. Dorothy Case-Blechschmidt.

Nov. 25, 1940, Cancer Forum—Dr. Dorothy Case-Blechschmidt.

Nov. 25, 1940, Radio Health Talk—Dr. Dorothy Case-Blechschmidt.

Nov. 26, 1940, Woman's Club of Drexel Hill—Dr. Dorothy Case-Blechschmidt.

Nov. 26, 1940, Overbrook Senior High School—Dr. M. Fraser Percival.

Dec. 27, 1940, Aronomink Club, Delaware County—Dr. Dorothy Case-Blechschmidt.

Jan. 9, 1941, Public Health Forum, sponsored by the Philadelphia Federation of Women's Clubs and Allied Organizations, Bellevue-Stratford Hotel—Dr. Dorothy Case-Blechschmidt presiding; Dr. Raymond A. Vonderlehr, assistant surgeon general, U. S. Public Health Service; Dr. George E. Pfahler, chairman of Cancer Control Committee of The Medical Society of the State of Pennsylvania; Dr. Charles Patton, president of Philadelphia County Dental Society; Dr. Hubley R. Owen, Director of Public Health of Philadelphia; Dr. Edward L. Bortz, president of Philadelphia County Medical Society; Dr. Charles J. Hatfield, chairman of the Public Health Council on Tuberculosis; Dr. Joseph T. Beardwood, associate professor of medicine, University of Pennsylvania; Dr. Yetta E. Deitch, Woman's Medical College of Pennsylvania.

Jan. 20, 1941, Parent-Teacher Association, Andalusia—Dr. John V. Blady.

Feb. 10, 1941, Woman's Auxiliary to the Berks County Medical Society—Dr. Edward L. Bortz.

Feb. 11, 1941, Woman's Auxiliary to Philadelphia County Medical Society—Dr. Robert Shoemaker.

Mar. 4, 1941, Health Day, sponsored by Woman's Club of Frankford—Drs. Camilla M. Anderson, J. Davis Paul, Dorothy Case-Blechschmidt, and Leonard F. Bender.

Mar. 28, 1941, Frankford High School—Dr. M. Fraser Percival.

Apr. 8, 1941, "Medicine and the National Crisis," Health Institute, sponsored by the Woman's Auxiliary to the Philadelphia County Medical Society—Dr. Francis F. Borzell, Major James B. Mason, Capt. John B. Kaufman, Dr. Malcolm W. Miller, Mrs. Maxwell J. Lick, Drs. Leon H. Collins, Edward A. Strecker, and Edward L. Bortz.

May 15, 1941, Oreland Parent-Teacher Association—Dr. Hoke Wammock.

May 20, 1941, J. Cooke Junior High School, Health Night (P. T. A.)—Dr. Gilson C. Engel.

MRS. M. FRASER PERCIVAL,
Public Relations Chairman,
Philadelphia County Auxiliary.

COUNTY AUXILIARY REPORTS

Allegheny.—On the afternoon of May 27 the auxiliary held its last meeting of the auxiliary year in the Cardinal Room of the Hotel William Penn, Pittsburgh.

A short business meeting preceded the program. Our guest speaker was Miss Irene Thomas, whose subject was "Joys of a Hobby." Miss Thomas is a collector of rare and beautiful dolls. About 6 years ago a small Russian doll, tucked in the toe of her Christmas stocking, gave her the inspiration to begin collecting dolls. Now she has one of the finest collections in the city. Some of her lovely dolls were displayed at the meeting.

Berks.—The auxiliary met on Apr. 14 at Medical Hall, Reading. A nominating committee was appointed.

The program featured a talk on "Personality and Clothes" by Mme. Yvonne Millet. Mme. Millet was born in France and studied dress designing at the University of Rheims. She said, "We dress because it is a necessity and a means of self-expression. We tell the world what we are by the clothes we wear. The main question is: What can you create with the means you have?" Mme. Millet modeled a serviceable wardrobe in order to demonstrate her belief that costumes must emphasize personality and, at the same time, give service, pleasure, and satisfaction.

Ideal weather favored the meeting in the country on May 12. Mrs. John H. Bisbing was a charming hostess to 43 members and guests at Camp Joy, the preventorium sponsored by the Kiwanis Club. Dr. John H. Bisbing, superintendent of the Berks County Tuberculosis Sanatorium, conducted the group on a tour of inspection, explained methods of treatment, and exhibited modern equipment. Particularly delightful is the dining room for children, which was gay with flowers and bright with spring sunshine. The schoolroom, too, is a cheerful and active part of the institution.

Officers were elected for the ensuing year. Mrs. Edward G. Meter is our new president.

The date of the reciprocity luncheon was changed from June 2 to June 9 at the Berkshire Country Club. Our president, Mrs. Ralph L. Reber, attended the reciprocity luncheon of the Philadelphia County Auxiliary as the guest of Mrs. Charles J. Swalm.

Chester.—The auxiliary met on May 21 at the home of Mrs. Michael Margolies, Coatesville, with a very good attendance of members and guests. A covered dish luncheon was enjoyed at one o'clock. Following the luncheon and before the regular business meeting the group was addressed by Miss Margaret Lattimer, Red Cross executive worker, who gave a most interesting talk on the work of the Red Cross, from the time in 1882 when the United States first became affiliated with the association to its scope at the present time, in peace and war. Miss Lattimer's talk gave much information and was greatly enjoyed.

At the business meeting which followed, Mrs. Mullin, the secretary, read the minutes of the last meeting and reported for the treasurer a balance of $58.52. A picnic was discussed and decided upon for the June meeting, at Westtown Farms, Westtown. Fifteen dollars in voluntary donations from 3 members was received for the Medical Benevolence Fund. A vote of thanks was given Mrs. Margolies for a very pleasant meeting.

Crawford.—A meeting was held jointly with the Crawford County Medical Society on May 30 at the Titusville Y. W. C. A., where a turkey dinner and social evening were enjoyed. The table was centered by an attractive arrangement of roses and snapdragons, with roses at each place as favors. The speaker, Rev. O. A. Caldwell, of the Presbyterian Church, conducted a panel discussion on "The Future of Democracy," with 8 young seniors of the Titusville High School taking part in a very refreshing and well-informed manner. Mrs. Margaret Greer Kunz, contralto, accompanied by

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Miss Frances Courtney, gave a group of delightful vocal numbers.

At the weekly meeting of the Medical Helpmeets' Duckpin League on Apr. 1, Mrs. Dale A. Rice and Mrs. George E. Hayward surprised the members with a very tasty buffet luncheon and a jolly afternoon was spent. On Apr. 15 they were guests of Mrs. Herman H. Walker, of Linesville. At 10:30 the ladies bowled on the new Linesville alleys, after which a luncheon was served at the home of the hostess, with dainty table decorations and favors of key rings bearing multicolored tenpins and balls. All had a grand time. On the afternoon of Apr. 22, Mrs. Maurice T. Leary was hostess and presented 3 beautiful prizes. In the evening Dr. and Mrs. Ned D. Mervine were surprised with a "housewarming" by members of the bowling league and their husbands, to the number of 40. This was an outstanding event of the year with Mrs. John H. Bailey and a live-wire committee in charge of the bounteous buffet. The evening was spent playing bingo and a gift was presented to Dr. and Mrs. Mervine.

Twelve members of the executive board of the auxiliary were guests of the president, Mrs. Vincent G. Hawkey, at the Venango Inn, on May 13. The business meeting began at 10:30 and a beautifully appointed luncheon was served at one o'clock.

Mrs. Charles E. Mullin, wife of the president of the medical society, was hostess at the meeting on May 21 at the Bartlett Hotel in Cambridge Springs. Preceding the dinner a delightful program of violin music was given by a student from the Polish Alliance College in Cambridge Springs, accompanied by the instructor of music from the school. A business meeting followed the dinner. The slate of new officers was read and accepted, as follows: President, Mrs. John M. Kinnunen; president-elect, Mrs. Kenneth A. Hines; first vice-president, Mrs. James N. Strausbaugh; second vice-president, Mrs. William H. Brennen; secretary, Mrs. Joseph R. Gingold; treasurer, Mrs. Frederick H. Muckinhaupt.

Mrs. James D. Stark, of Erie, the speaker of the evening, gave helpful suggestions for becoming better auxiliary members and proposed better relations between the medical profession and the lay public. Another guest of the evening was Mrs. Henry R. Steadman, of Erie.

The last meeting of the year was to be held on June 18, and many members were looking forward with pleasure to the annual councilor district boat ride on Lake Erie, June 19.

Dauphin.—A meeting of the auxiliary was held at the Academy of Medicine, Harrisburg, on Mar. 18.

The program was in charge of Mrs. Tom Outland, who introduced the speaker, Col. Henry Shoemaker of the State Department of Archives. He told many interesting stories about the Indians, and other folklore concerning this section of the state.

Col. Shoemaker then introduced Mr. J. Herbert Walker, from the State Department of Commerce. Mr. Walker showed us a Travelcade of sound motion pictures. "The Year-Round Story of Pennsylvania" was the title of the "movie."

The public relations meeting was held on Apr. 15 at the Academy of Medicine, Harrisburg. Mrs. Hewett C. Myers was chairman. Dr. Francis F. Borzell, president of the State Medical Society, was the guest speaker. His topic was "General Health."

A tea following the meeting was in charge of Mrs. George H. Seaks, and Mrs. David E. Hoff was decorations chairman.

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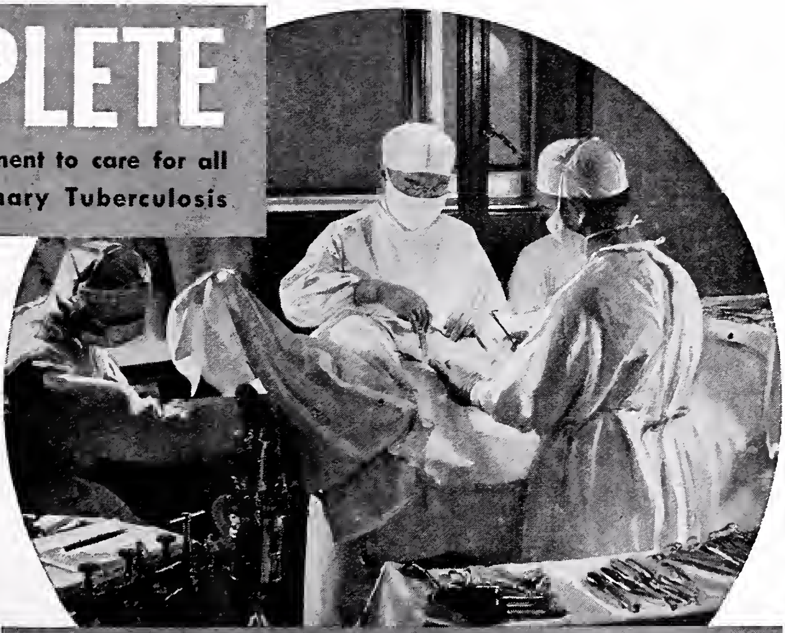

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Our annual luncheon meeting was held on May 20 at the Carlisle Country Club. The president of the State Auxiliary, Mrs. Maxwell Lick, was the guest speaker.

Delaware.—On May 9 the auxiliary held its annual spring luncheon at the Rolling Green Golf Club. Mrs. Percy L. Mehring, chairman of hospitality, arranged the luncheon, at which we enjoyed the company of our district councilor, Mrs. J. Treichler Butz, of Allentown, and Mrs. Elmer H. Bausch, president of the Lehigh County Auxiliary. Later we adjourned to the lounge of the clubhouse and proceeded with the business of the day.

All old business having been duly attended to, the following slate of officers was presented and elected by acclaim: President, Mrs. John E. Smaltz; president-elect, Mrs. Drury Hinton; vice-president, Mrs. Albin R. Rozploch; recording secretary, Mrs. Ernest L. Noone; corresponding secretary, Mrs. Walter E. Wentz, Jr.; treasurer, Mrs. A. Maxwell Sharpe; directors, Mrs. Percy L. Mehring (1 year), Mrs. Walter E. Egbert (2 years).

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Through the arrangement of our program chairman, Mrs. Drury Hinton, a short skit, "If Women Worked as Men Do," was given by the drama department of the Aronomink Women's Club and was thoroughly enjoyed by all present.

A meeting of the executive board was held on May 23 to plan for a picnic for the families of auxiliary members and for the garden card party to be held in June for the purpose of raising money for the Medical Benevolence Fund and other philanthropies.

Erie.—A dinner-bridge was held at the Lake Shore Country Club, Erie, May 5, with the past presidents as honor guests. Mrs. John F. Hartman, president, introduced Mrs. James H. Delaney, who acted as toastmaster for the evening. Everyone enjoyed Mrs. Delaney's humorous review of the auxiliary's activities. In turn each past president gave brief talks. The tables were attractively decorated with spring flowers and each past president was presented with a corsage of roses and sweet peas.

The officers for the coming year were announced as follows: President, Mrs. Frank J. Theuerkauf; president-elect, Mrs. James H. Delaney; first vice-president, Mrs. Ralph D. Bacon; second vice-president, Mrs. Henry R. Steadman; recording secretary, Mrs. J. Harrison Tate; corresponding secretary, Mrs. Alexander M. Usher; treasurer, Mrs. George E. Becker.

Forty-nine members were present, 13 of them being past presidents.

Franklin.—On Apr. 16 the auxiliary had a luncheon and regular meeting at the home of Mrs. Joseph C. Hudson, Chambersburg. Hostesses were Mrs. Hudson, Mrs. Ray C. Gabler, Mrs. Herman A. Gilda, Mrs. J. Elmond Kempter, and Miss Kathleen Seibert.

Mrs. Ira M. Henderson presided during the meeting. Mrs. Samuel D. Shull, chairman of the Ways and Means Committee, announced that a card party would be given on Apr. 28 at the Hotel Washington. Part of the proceeds was to be used to purchase a blood transfusion machine for Britain. The guest of honor and speaker for the afternoon was Mrs. Charles C. Crouse, president-elect of the State Auxiliary. She gave a very interesting talk in her gracious manner.

On May 20 a social meeting was to be held at the home of Mrs. Shull in Chambersburg.

Lackawanna.—Mrs. Maxwell Lick, of Erie, president of the State Auxiliary, and Mrs. Clarence Hummel, Easton, Third District councilor, were guests of honor at the luncheon meeting held on May 13 at the Scranton Club. Mrs. Louis A. Milkman, president, presided; approximately 55 members were present. Miss Gretchen Houser, entertainment chairman, was in charge.

The members paid silent tribute to the memory of Mrs. W. Rowland Davies who died very suddenly in April. Mrs. Davies, who was a charter member of the Lackawanna Auxiliary, had given most generously of her time and energy and had served as secretary, president, and director.

It was reported that Mlle. Eve Curie's lecture, "The Magic of Radium," given in Scranton on Apr. 24, had been an outstanding success.

Instruments and drugs to be sent to England for air-raid victims were solicited.

Following the luncheon Mrs. J. Norman White, program chairman, presented Mrs. John D. Lloyd, soprano, who sang a group of "spring songs."

Mrs. Lick, in her address, urged the members to be aware of their responsibilities. "We are allied with a great and noble profession," she continued, "and are the only woman's organization directly concerned with health propaganda."

After the meeting, at the invitation of Miss Sutherland, directress of nurses at the Scranton State Hospital, the members were escorted through the newly opened institution.

Lehigh.—On May 13 about 200 members and friends were entertained at the annual luncheon at the Americus Hotel, Allentown. Mrs. Elmer H. Bausch, president, welcomed the gathering and introduced Mrs. Joseph D. Rutherford, chairman of the nominating committee, who read the slate of new officers for the coming year.

After the luncheon H. Leh and Company, local department store, presented a preview of summer fashions with living models. Immediately following, contract and auction bridge, "500," and pinochle were enjoyed.

The successful affair was arranged by the Ways and Means Committee, Mrs. H. Warren Endres, chairman. The proceeds are to be used for the charity fund.

Northumberland.—The auxiliary held a luncheon and card party, May 16, at the Homestead Tea Room, in honor of Mrs. Maxwell Lick, of Erie, president of the State Auxiliary. She was presented by Mrs. E. Roger Samuel, of Mt. Carmel, president of our county auxiliary. Mrs. Robert S. Woehrle, of Wilkes-Barre, councilor for the Twelfth District, also gave an interesting talk. After the luncheon, cards were played.

Mrs. Lick declared in her talk that doctors' wives have so much in common that they find association agreeable and stimulating, and they have their own part to play in the medical world.

A councilor district meeting was to be held on June 12 at the Shamokin Valley Country Club. The regular monthly meeting was to be held at the home of Mrs. Ronald McIntosh at the Selinsgrove State Colony, of which her husband is superintendent.

Thirty members attended the last meeting, and guests were present from Mt. Carmel, Shamokin, Kulpmont, Sunbury, and Selinsgrove.

Philadelphia.—May 13 was the date of our annual luncheon held at the Philadelphia County Medical Society Building. Mrs. Markley Stevenson gave a talk with illustrated charts on "The Design in Flower Arrangements." We were also entertained by Mrs. O. Spurgeon English on the accordion.

After a short business session, the new officers were presented: President, Mrs. Francis F. Borzell; president-elect, Mrs. George C. Yeager; first vice-president, Mrs. S. Dale Spotts; second vice-president, Mrs. Gordon J. Saxon; recording secretary, Mrs. John C. Howell; corresponding secretary, Mrs. Leonard F. Bender; treasurer, Mrs. Leonard C. Hamblock; directors for 2 years—Mrs. Charles J. Swalm, Mrs. J. Parsons Schaeffer, and Mrs. Louis D. Englerth.

Our year has been a great success and we were able to donate about $1300 to charity. We had many guests from neighboring auxiliaries.

Schuylkill.—The auxiliary had a very enjoyable annual luncheon at the Necho Allen Hotel, Pottsville, on May 15, with our state president, Mrs. Maxwell Lick, of Erie, as guest of honor. Mrs. Lick gave a most interesting talk, at the conclusion of which she congratulated the Schuylkill County Auxiliary on its achievements during the past year and its many accomplishments since its inception.

During the luncheon, group singing was enjoyed with one of our members, Mrs. John L. Flanigan, Pottsville, at the piano, and another member of the auxiliary, Mrs. Otto A. Miller, Ashland, as soprano soloist. Dancing by members of the Jack and Jill Dance and Fun Classes, Pottsville, was also on the program. Mrs. Lick, state president, and Mrs. Charles V. Hogan, Pottsville, our president, were presented with lovely corsages.

Announcement was made by Mrs. T. Lamar Williams, Mt. Carmel, Fourth District councilor, that a councilor district meeting of the auxiliaries would be held at the Shamokin Valley Country Club on June 12.

Westmoreland.—Through the efforts of the auxiliary, approximately 150 women were given an opportunity to hear Dr. William W. Bauer, of Chicago, director of the Bureau of Health Education of the American Medical Association, speak on "The Skin You Love to Re-touch," Tuesday afternoon, May 6, in the First Presbyterian Church of Greensburg, preceding a tea.

Mrs. Paul G. McKelvey, president, introduced Mrs. Charles C. Crouse, State Auxiliary president-elect, who in turn introduced the speaker. Previously, Dr. Bauer, who is co-editor of *Hygeia,* had addressed a large audience of high school students on Tuesday morning and the members of the Rotary Club at noon.

The auxiliary has given 38 subscriptions of *Hygeia* to schools and libraries in the county during the past year.

The members of the Woman's Association of the Westmoreland Hospital postponed their regular meeting for a day in order to permit their members to attend the lecture and tea of our auxiliary.

Two tea tables, elaborately decorated and beautifully appointed with crystal and silver, were in service. Mrs. Zelma Walker, who formed the auxiliary, and Mrs. Irwin J. Ober, a former president, poured. High school girls were aides. Miss Ann Carlisle played during the tea and her music formed a pleasant background for the affair.

Mrs. R. E. Lee McCormick, of Irwin, was chairman of the tea arrangements and Mrs. J. Morgan Mayhew, of Greensburg, had charge of the program. Both were complimented upon their work.

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Karo syrup	2 tbs.

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Water, boiled	12 ozs.
Karo syrup	2 tbs.

Powdered milk	5 tbs.
Water, boiled	20 ozs.
Karo syrup	2 tbs.

ALLERGIC INFANTS

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Water, boiled	12 ozs.
Karo syrup	2 tbs.

Hypoallergic milk	10 ozs.
Water, boiled	10 ozs.
Karo syrup	2 tbs.

Sobee	8 tbs.
Water, boiled	18 ozs.
Karo syrup	2 tbs.

NEUROPATHIC INFANTS

Evaporated milk	7 ozs.
Water, boiled	13 ozs.
Barley flour	3 tbs.
Karo syrup (cooked ten minutes until thick)	1 tbs.

Whole milk	12 ozs.
Water, boiled	6 ozs.
25% Lactic acid	2 tsp.
Karo syrup	2 tbs.

2% Lactic-acid milk	18 ozs.
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MEDICAL NEWS

Births

To Dr. and Mrs. John V. Foster, of Harrisburg, a son, May 23.

To Dr. and Mrs. John C. DeSanto, of Kingston, a son, May 25.

To Dr. and Mrs. George H. Stein, of Harrisburg, a daughter, June 9.

To Dr. and Mrs. Leo A. Ransavage, of Edwardsville, a daughter, May 22.

To Dr. and Mrs. Anthony F. Riofski, of Wilkes-Barre, a daughter, May 4.

To Dr. and Mrs. Herbert S. Gaskill, of Philadelphia, a daughter, May 23.

To Dr. and Mrs. R. Stanley Bank, of Harrisburg, a son, Stephen Paul, May 25.

To Dr. and Mrs. Herman Hirsh, of Harrisburg, a son, Steven Lawrence, May 30.

To Dr. and Mrs. Richard D. Schreiber, of Lebanon, a daughter, Sara Kate, Mar. 16.

To Dr. and Mrs. Peter Zemo, of Middletown, a son, June 9. Mrs. Zemo was the former Ruby C. V. Lehman, M.D.

To Dr. and Mrs. Nelson S. Scharadin, of Cleona, twin daughters, Patricia and Priscilla, Apr. 27.

Engagements

Miss Deborah Cloud, daughter of Dr. and Mrs. J. Howard Cloud, of Ardmore, and Mr. Victor C. Vaughan, 3d, of Richmond, Va.

Miss Mildred Pearce Sinkler, daughter of Dr. and Mrs. Francis Wharton Sinkler, of Bryn Mawr, and Mr. Edward T. Stuart, Jr., of St. Davids.

Miss Gretchen Hirst Leopold, daughter of Dr. and Mrs. Raymond S. Leopold, of Philadelphia, and Mr. Robert Devitt Hamilton, Jr., of Wyncote.

Marriages

Miss Barbara Jean Blackburn to James Reginald Myers, M.D., of Everett, June 4.

Miss Loretta Davitt, of Plains, to Charles A. Gibbons, Jr., M.D., of Kingston, Apr. 26.

Miss Anne Terrill Yount to Thomas Taylor Kochenderfer, M.D., both of Norristown, June 2.

Miss Gordon Schoff, daughter of Dr. and Mrs. Charles H. Schoff, of Media, to Mr. Lewis T. Riddell, of Springfield, June 25.

Miss Virginia Grainger, of Waupun, Wis., to Thomas E. Bowman, Jr., son of Dr. and Mrs. Thomas E. Bowman, of Harrisburg, May 31.

Miss Judith Parsons Coover, daughter of Dr. and Mrs. Carson Coover, of Harrisburg, to Mr. John Wallace Wishart, of Carnegie, June 10.

Miss Louise Elizabeth Fewell, daughter of Dr. and Mrs. Alexander G. Fewell, of Philadelphia, to Mr. Clement Gile Motten, of Wethersfield, Conn., June 14.

Miss Margaret Jane Vaughn, national women's skating champion, and daughter of Dr. and Mrs. Arthur R. Vaughn, of Philadelphia, to First Lieutenant Henry Sullivan, of the Army Air Corps, June 21. Lieutenant Sullivan was honored as "best athlete" in the West Point class of 1940.

Deaths

○ *Indicates membership in county medical society, The Medical Society of the State of Pennsylvania, and the American Medical Association.*

○ **William W. Sturgis,** Glenshaw; Jefferson Medical College, 1887; aged 89; died on June 5.

○ **Samuel Mazor,** Philadelphia; Medico-Chirurgical College of Philadelphia, 1914; aged 51; died on Apr. 28. He was a Fellow of the A. M. A.

Henry Blumzweig, Philadelphia; Temple University School of Medicine, 1917; aged 49; died on May 19. He is survived by his wife.

Albert D. Faust, Bala-Cynwyd; Jefferson Medical College, 1894; aged 69; died on June 9. He is survived by his wife and a daughter.

Elwood Matlack, Philadelphia; University of Pennsylvania School of Medicine, 1886; aged 75; died on June 12. He is survived by his wife.

Edward Stanley Berry, Shippensburg; University of Pennsylvania School of Medicine, 1894; aged 70; died on May 21. He is survived by his wife.

○ **Robert Miller,** Drexel Hill; Medico-Chirurgical College of Philadelphia, 1902; aged 67; died on May 20. He is survived by his widow, 2 daughters, and 2 sons.

○ **Hubert J. Phillips,** Bear Lake (Warren Co.); National Medical University of Chicago, 1896; aged 76, died on May 15 at his home following a long illness. He is survived by his widow.

James M. Tyson, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1892; aged 80; died on June 13. He is survived by his wife, a daughter, and 2 sons.

○ **Oscar E. Hoffmann,** West Hazleton; Jefferson Medical College, 1891; aged 72; died on Apr. 15 from acute coronary thrombosis. Dr. Hoffmann was school physician for the West Hazleton School District.

○ **Howard Murray Ritter,** South Williamsport; Jefferson Medical College, 1895; aged 71; died on June 1. Dr. Ritter was a former president of the Lycoming County Medical Society and was a Fellow of the American College of Surgeons.

○ **Pedro Juan Carreras,** Philadelphia; Jefferson Medical College, 1918; aged 49; died on May 15 from injuries received in an automobile accident. Dr. Carreras was chief of the obstetric service at St. Mary's Hospital, Philadelphia.

○ **Jason W. Carson,** Indiana; Jefferson Medical College, 1902; aged 80; died on May 21. Prior to becoming a physician, Dr. Carson was a pharmacist operating stores in DuBois, Leechburg, and Indiana. He was a member of the first graduating class of Indiana State Normal School. Surviving are his widow, a son, and a daughter.

○ **Bernard Kohn,** Philadelphia; University of Pennsylvania School of Medicine, 1899; aged 65; died on May 21. Dr. Kohn was for many years chief of the department of cardiology at the Jewish Hospital in Philadelphia, but had retired a few years ago. He was a Fellow of the A. M. A. Surviving are 2 sons and a daughter, his wife having died 2 months previously.

○ **Frank Joseph Frosch**, Philadelphia; Jefferson Medical College, 1908; aged 60; died on May 14. Dr. Frosch was associate professor of gynecology at the Hahnemann Medical College of Philadelphia, having been a member of the staff since his graduation from that institution in 1907. Surviving are his widow, a daughter Florence, who is a physician in Allentown, and a son.

○ **Joseph Alan Corson**, Wilkes-Barre; Jefferson Medical College, 1921; aged 47; died on May 25 at his home from a cerebral hemorrhage. Dr. Corson taught school for one year previous to his matriculation at Jefferson. He left college to serve in the United States Navy during World War I, after which he returned to finish his medical course. He was chief examining physician for Wilkes-Barre Selective Service Board No. 1. Dr. Corson is survived by his widow and a daughter.

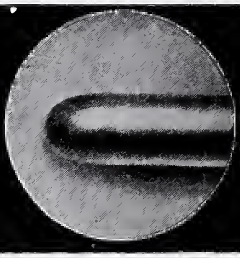
○ **Tyrus E. Swan**, Easton; Kentucky School of Medicine, Louisville, 1889; aged 80; died at his home on June 5 following a 2-year illness. Dr. Swan was a native of Indiana, removing to Pennsylvania in 1905. For many years he was associated with the Easton Hospital as chief of the ophthalmology service, becoming emeritus chief of that department about 15 years ago. He was a former president of the Northampton County Medical Society, and was a Fellow of the A. M. A. He is survived by 3 brothers.

○ **Allen B. Painter**, Mill Hall (Clinton Co.); Medico-Chirurgical College of Philadelphia, 1899; aged 68; died on Apr. 23 following an illness of 5 weeks. He was a member of the medical staff of Lock Haven Hospital and had served on the obstetric staff until a few years ago when failing health forced him to curtail his activities. He was one of the few general practitioners serving a large rural area and his practice was one of the heaviest in the section. He was a Fellow of the A. M. A. He is survived by 2 sons, his wife having died 2 years ago.

○ **Otto C. Gaub**, Pittsburgh; University of Pennsylvania School of Medicine, 1894; aged 68; died on May 22 in Boston. Since 1926 Dr. Gaub had been chief of the surgical staff of Allegheny General Hospital in Pittsburgh and chief surgeon for the Central Region of the Pennsylvania Railroad. He was a founder and a past president of the Pittsburgh Academy of Medicine and one of the founders of the American Board of Surgery and of the Pittsburgh Surgical Society. He was a Fellow of the A. M. A. and the American College of Surgeons. His widow survives him.

○ **Paul B. Bender**, Philadelphia; Jefferson Medical College, 1915; aged 52; died in the U. S. Naval Hospital, Philadelphia, on May 13 after an illness of 15 months. Dr. Bender was chief pediatrician at Kensington Hospital for Women. While serving his internship he enlisted in the United States Army during World War I and served overseas with the 80th Field Artillery as a Major in the Medical Corps. He was a member of the Philadelphia Pediatric Society, a Fellow of the A. M. A., and a Fellow of the American Academy of Pediatrics. He is survived by his widow and 2 brothers, one of whom, Leonard F., is also a physician.

○ **Harold G. Von Goldberg**, Philadelphia; University of Pennsylvania School of Medicine, 1900; aged



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65; died on May 11 from an acute heart condition in Asheville, N. C., where he had gone in an effort to regain his failing health. Dr. Von Goldberg was consulting ophthalmologist at Misericordia Hospital and Kensington Hospital for Women. He had also served as ophthalmologist at the Episcopal Hospital and for the B. & O. Railroad. He contributed many articles to medical literature and was a member of the College of Physicians, a Fellow of the A. M. A., and a Fellow of the American College of Surgeons. He is survived by his widow and 2 daughters.

○ **Olin G. A. Barker,** Johnstown; University of Pennsylvania Medical School, 1898; aged 69; died at his home on May 28 from an acute heart attack following influenza. Dr. Barker had just returned from a winter vacation in Florida, having retired from active medical practice last October. Following his internship he served as clinical assistant at Wills Eye Hospital in Philadelphia and then took postgraduate courses in ophthalmology in the Universities of Heidelberg, Vienna, and Berlin. Upon his return to this country Dr. Barker located in Pittsburgh and 3 years later removed to Johnstown. For many years he served as chief of the ophthalmology staff at Memorial and Mercy Hospitals in Johnstown. In 1933 he retired as active chief and became consultant on the staff of Memorial Hospital. He was a Fellow of the A. M. A. and the American Academy of Ophthalmology and Otolaryngology. During the past 15 years Dr. Barker and his wife traveled extensively throughout the world. His widow is his only survivor.

○ **Henry K. Mohler,** Philadelphia; Jefferson Medical College, 1912; aged 54; died on May 16 at his home from an acute heart condition. Dr. Mohler was dean of Jefferson Medical College. He was graduated in 1907 from the Philadelphia College of Pharmacy with the degree of Doctor of Pharmacy. Following his internship he was named instructor in medicine at Jefferson Medical College and placed in charge of the laboratory of clinical medicine. In 1922 he was appointed demonstrator in medicine, later associate in medicine, then assistant professor, and in 1932 associate professor. In 1936 he became clinical professor of therapeutics, and following the death of Dr. Ross V. Patterson in 1938 he was made dean, assuming the dual position which Dr. Patterson had held at the time of his death; namely, dean and Sutherland M. Prevost professor of therapeutics. Dr. Mohler held the rank of captain in the Medical Corps and was first assistant and then chief of the medical service in General Hospital 38 in Nantes, France, which had been organized by Jefferson Hospital. After the war he received the reserve rank of lieutenant colonel which he held until 1938 when he resigned from the Medical Officers' Reserve Corps. He was president and an active leader in the work of the Philadelphia Heart Association. Dr. Mohler was certified by the American Board of Internal Medicine and was a Fellow of the A. M. A. and the American College of Physicians. In 1939 he received the honorary degree of Doctor of Science. Besides his parents, he is survived by his widow and a daughter.

Mrs. Clara M. McCune, wife of Charles E. McCune, M.D., of West Springfield, died on Apr. 13 of pernicious anemia.

Mrs. William Rowland Davies, wife of William Rowland Davies, M.D., of Scranton, died suddenly on Apr. 28. Mrs. Davies was a charter member of the Woman's Auxiliary to the Lackawanna County Medical Society. She served as president, secretary, and director of the auxiliary.

Miscellaneous

JOSEPH F. MCCARTHY, M.D., professor of urology at the New York Polyclinic Medical School and Hospital, was recently awarded the Francis Amory prize by the American Academy of Arts and Sciences for his work in urology.

ROBERT T. FRANK, M.D., of New York, was the guest speaker at the annual meeting of the Pittsburgh Obstetrical and Gynecological Society on May 24. His subject was "The Present Status of Endocrinology as it Pertains to Obstetrics and Gynecology."

THE MEDICAL ALUMNI ASSOCIATION of the University of Pittsburgh is holding a dinner at the Hotel William Penn, in the Cardinal Room, Wednesday, Oct. 8, at 6:30 p. m. The meeting will be held in conjunction with the annual session of The Medical Society of the State of Pennsylvania. Tickets will be available at the registration desk.

ALEXANDER J. STEIGMAN, M.D., formerly of the Department of Pediatrics of the University of Pennsyl-

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vania Medical School and the Children's Hospital of Philadelphia, and now of the Harvard University Medical School, has left for England to take up his post as pediatrician to the American Red Cross—Harvard University Hospital for Infectious Diseases.

A MEETING OF THE PITTSBURGH SURGICAL SOCIETY was held on June 12 in the auditorium of Mellon Institute at 8:15 p.m. Charles W. Mayo, of Rochester, Minn., presented a paper on "Malignancy of the Lower Colon; Evaluation of the One-Stage Combined Abdominoperineal Resection," with lantern slides and motion picture demonstrations. A dinner for the members preceded the scientific meeting.

PLEDGES SUPPLY OF EYES FROM THE DEAD FOR BLIND

A novel organization, the Dawn Society, has just been formed in northern California of persons who pledge their eyes at death to give sight to the living blind.

As a result, it is hoped that doctors will have enough cornea tissue from healthy eyes for people blind because of damaged corneas. This condition accounts for about 5 per cent of all types of blindness and is often due to industrial accidents.

Doctors have been successful in grafting corneas from one eye to another in recent years, but have been hampered by lack of healthy tissue for the operation. Oral promises to give their eyes to the blind, made by people before death, have not been helpful, as relatives will seldom agree to the operation when the willing donor is deceased.

Sponsored by the International Order of Good Templars, the Dawn Society now has 40 members, each having signed a written, legally binding pledge to give his eyes to the blind immediately after death. The plan has the hearty approval and co-operation of the medical profession, and leading eye specialists in principal northern California cities will perform the postmortem operation on members. Both eyes will be removed within 6 hours after death, and stored in a light saline solution under refrigeration. The tissues will respond to grafting up to 2 weeks after being removed from the donor. So great will the demand be, however, that it will not be necessary to store the eyes more than a few hours or days.

Blind persons who want the sight-restoring operation will apply to their own physicians, and names of applicants will be listed and served in order of their receipt by the Dawn Society. The "gift eyes" may be sent to other cities, and may serve various people.—*Science News Letter,* May 17, 1941.

CLASSIFIED ADVERTISEMENTS

Classified advertisements are payable in advance. To avoid delay in publishing, remit with order.

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Artist.—A Johns Hopkins (Max Broedel) trained artist is available for illustrating your paper or aiding in your exhibit at the state meeting. Address: MISS ELLA MAY SHACKELFORD, 1015 Highland Bldg., Pittsburgh, Pa.

Wanted.—Assistant, under 40 years of age, for contract mining practice, Pennsylvania License required. Salary $250.00 a month, plus extras. Extras consist of OB and GU work, plus outside practice, which is allowed. Address: Dept. 785, PENNSYLVANIA MEDICAL JOURNAL.

THE MEDICAL RESERVE CORPS

Almost one-half of the reserve officers of the Army Medical Corps have been ordered to extended active duty, principally in the lower ranks. As of April 30, there were 12,126 medical reserve officers, of whom 5891 were on extended active duty. However, only 9 out of 150 reserve colonels had been ordered to active duty and only 80 out of 349 lieutenant colonels. The remainder of the active list shows 270 out of 590 majors, 1168 out of 1914 captains, and 4364 out of 9123 lieutenants. The number of medical reserve officers available has been reduced by more than 1000 during the past few months by resignations and physical examinations.—*J. A. M. A.,* June 28, 1941.

BURIAL BEGINS AT .... ?

Because the editor realizes that to continue active and progressive requires most men in the sixth decade of life at times to do more than a little tugging and lifting by their own "boot straps," we pass on to our readers the following, the reading of which recently helped to pull us out of a Monday morning "funk":

Old Age

When is a man old?

When should a physician—or any other man—retire?

As soon as he loses interest in and enthusiasm for his work or feels that he knows all there is to know about it.

We all know that the number of years a man has lived is no adequate index of his age. There are some who are antediluvian mummies at 30, and others who are vital factors in the life of their communities at 90. As long as a man is doing something worth while and means something to the world, he is young.

If you have lost interest in medical society meetings; if you "cannot find time" to read one or two medical journals (at least); if the last book in your library is 10 years old, or the later ones haven't been studied; if "what you learned in medical college is good enough" for you; if "all these new-fangled notions are damned foolishness," you are growing old as a physician.

Don't let life bury you until you are dead. Keep living and learning and loving and you will stay young.—*Journal of the Florida Medical Association.*

BOOK REVIEWS

ANUS, RECTUM, AND SIGMOID COLON. Diagnosis and Treatment. By HARRY ELLICOTT BACON, B.S., M.D., F.A.C.S., F.A.C.P., clinical professor of proctology, Temple University School of Medicine; associate professor of proctology, Graduate School of Medicine, University of Pennsylvania; visiting proctologist, St. Luke's and Children's Hospital; proctologist, National Stomach Hospital; consultant proctologist, Mercy Hospital, and Paul Kimball Hospital, Lakewood, N. J.; co-founder and past president, Proctologic Society Graduate Hospital, University of Pennsylvania. Second edition, 857 pages, 507 illustrations. Philadelphia, Montreal, London: J. B. Lippincott Company, 1941. Price, $8.50.

That proctology is receiving more attention from the medical profession at the present time is evidenced by the rapid exhaustion of the first printing of this new work.

Although but a single volume, the coverage is remarkably complete and detailed. Presentation proceeds from details of the anatomy, physiology, histology, and pathology of the anus, rectum, and sigmoid colon to methods of examination, including bacteriology, fluoroscopy, and special tests, to diagnosis and treatment of malformations, inflammations, fissure, fistula, abscess, stricture, hemorrhoids, benign and malignant tumors, megacolon, and foreign bodies. Recently developed methods of anesthesia and operative procedures receive adequate attention.

Extensive bibliographies accompany each chapter. Use of an outline and orderly presentation make for efficient reference. There is ample illustrative material, consisting of photographs, photomicrographs, x-ray plates, and drawings by William B. McNett of the Max Brodel School, which are examples of the best in present-day medical art.

METHODS OF TREATMENT. By LOGAN CLENDENING, M.D., clinical professor of medicine, Medical Department of the University of Kansas; attending physician, University of Kansas Hospital, and EDWARD H. HASHINGER, A.B., M.D., clinical professor of medicine, Medical Department of the University of Kansas; attending physician, University of Kansas Hospital and St. Luke's Hospital, Kansas City, Mo. Seventh edition. St. Louis: The C. V. Mosby Company, 1941. Price, $10.00.

In the seventh edition of this interestingly written treatise on therapeutics, the authors have retained the same general plan as in previous editions. However, new sections have been added on such subjects as chemotherapy of coccal diseases, backache, peripheral vascular diseases, Raynaud's disease, scleroderma, deficiency diseases, anesthetics, and gout. Many other sections have been revised.

The book is divided into two parts. The first deals with the methods used in therapeutics and includes well-written chapters on drugs, anesthesia, immunologic products, hormones, dietetics, infant feeding, physiotherapy and radiotherapy, climatotherapy, and psychotherapy. All these subjects are treated from the point of view of the general practitioner, and the material is so presented that he may find easy reference for those problems which arise daily.

The second part of this volume deals with therapy of diseases and systems. This section is well written and illustrated to advantage with x-rays, figures, and tables. In the chapter on Diseases of the Digestive System are several pages on visceroptosis and congenital asthenia universalis and its management. The suggestions therein are invaluable to the practitioner who has had many of these cases and who has cast around into all forms of medication, corsets, and diets in an effort to help these people. Unfortunately, this text—like other volumes on therapeutics—skims over the subject of endocrine therapy and omits the subjects of menorrhagia, dysmenorrhea, premenstrual tension, and menopause almost completely. There is an adequate chapter on common nervous disorders which should be included in the diagnostic knowledge of the general practitioner.

There are 3 features of this text which are of special interest to the reviewer. First is the practice of mentioning by name the various recognized products on the market today and discussing the relative merits of each. Second is a most novel treatment of backache by manipulation without anesthesia, which if effective should belong in the therapeutic armamentarium of every physician practicing general medicine. Third is the historical and whimsical touch attached to the material throughout, making it more than a textbook. In fact, the volume is exceptionally engrossing and most enlightening to the physician who reads with an eye for humor and background in medicine.

THE 1940 YEAR BOOK OF INDUSTRIAL AND ORTHOPEDIC SURGERY. Edited by CHARLES F. PAINTER, M.D., orthopedic surgeon to the Massachusetts Women's Hospital and Beth Israel Hospital, Boston, Mass. Chicago, Ill.: Year Book Publishers. Price, $3.00.

This book reviews the current literature pertaining to deformity and injury to the skeletal structure in a practical manner. This volume is of particular interest to the physician doing industrial work on a part-time or a full-time basis. Throughout the text many industrial problems are presented. One chapter is devoted exclusively to industrial medicine and surgery.

This volume is comprehensive, authoritative, and practical in its review of the current literature.

DISEASES OF THE DIGESTIVE SYSTEM. Edited by SIDNEY A. PORTIS, B.S., M.D., F.A.C.P., associate clinical professor of medicine, Rush Medical College of the University of Chicago; attending physician, Michael Reese Hospital, etc., Chicago, Ill. Octavo, 952 pages, illustrated with 176 engravings. Philadelphia: Lea & Febiger, 1941. Price, $10.00, cloth.

Here is a new volume on a subject which has progressed rapidly in the past 20 years. The book is up to date and as complete as one volume can possibly be on such a wide field.

The editor has done wisely in choosing his authors for this symposium. Such names as Schindler, Werner, Wangensteen, Eusterman, Grinker, Ivy, and Hurst indicate the quality and authoritativeness of subject material. All the authors are leaders in their special branches of gastro-enterology and are qualified to write on the subjects assigned.

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Every precaution has been taken to insure accuracy in these advertisements and in this index, but there is no guarantee against errors or omissions.

The general arrangement of the text is logical, Part I, a section on anatomy and physiology, is systematically arranged. Part II deals with etiologic factors, and included in this section is a brief yet clearly written section on gastro-intestinal neuroses. An interesting feature of this section is a chapter on pellagra and its gastro-intestinal manifestations. Parts III, IV, and V deal with diseases of the esophagus, stomach, and duodenum, other diseases of the digestive system, and diseases of the large bowel and rectum respectively.

No material of real clinical importance is omitted from this text and the only undesirable feature is the necessary repetition and overlapping to be found in any symposium on one field of medicine.

Most of the chapters are well illustrated, especially those on parasitic infestations. There is much material on dietetics, from the point of view of both etiology and therapy. The print is clear and the subject matter has been edited so as to make it easily readable.

This volume should be a welcome addition to the shelf of most gastro-enterologists and general practitioners who are interested in keeping up to date in the field of gastro-enterology.

ELECTROCARDIOGRAPHY IN PRACTICE. By ASHTON GRAYBIEL, M.D., instructor in medicine, Courses for Graduates, Harvard Medical School; research associate, Fatigue Laboratory, Harvard University; assistant in medicine, Massachusetts General Hospital, and PAUL D. WHITE, M.D., lecturer in medicine, Harvard Medical School; physician, Massachusetts General Hospital, in charge of the cardiac clinics and laboratory. 319 pages with 272 illustrations. Philadelphia and London: W. B. Saunders Company, 1941. Price, $6.00.

Since electrocardiography has come into such prominence, and with the many volumes which are printed to assist and educate one in arriving at a proper diagnosis, this volume has aided very materially in the interpretation of the electrocardiogram.

Many physicians throughout the country have gained much knowledge in a fundamental way in both the use of the electrocardiograph and the interpretation of its findings. There has been a great need for a book of instruction which would aid in arriving at the proper conclusion. To have combined the etiologic factors along with the electrocardiograms for interpretation, the work becomes more interesting and better interpretations are naturally obtained.

There is incorporated in the first part of this volume a comprehensive study of the normal heart findings as well as disorders of rhythms as they occur in the different etiologic types of heart disease.

The importance of case histories is justified by having here associated the clinical outline to study along with the cardiographic findings.

In the second part there are approximately 130 electrocardiograms for interpretation. These afford an opportunity for both practice and discussion, showing the great value which may be had from this method of teaching.

The authors are to be complimented for the clarity of this work, difficult as it actually is, for it offers the opportunity to go further into the study of the different interpretations in books which are not too heavily laden with theoretic work.

Since most of these tracings were selected on the basis of their frequent occurrence, diagnoses are made which are of the utmost value. The complete index makes references possible.

For a practical volume on electrocardiography we can most highly recommend this work from the best of authors as one which will not only aid the beginner in his clinical work but be a great review for all cardiologists.

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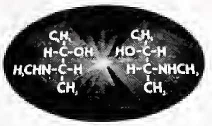
in the Hay Fever Season



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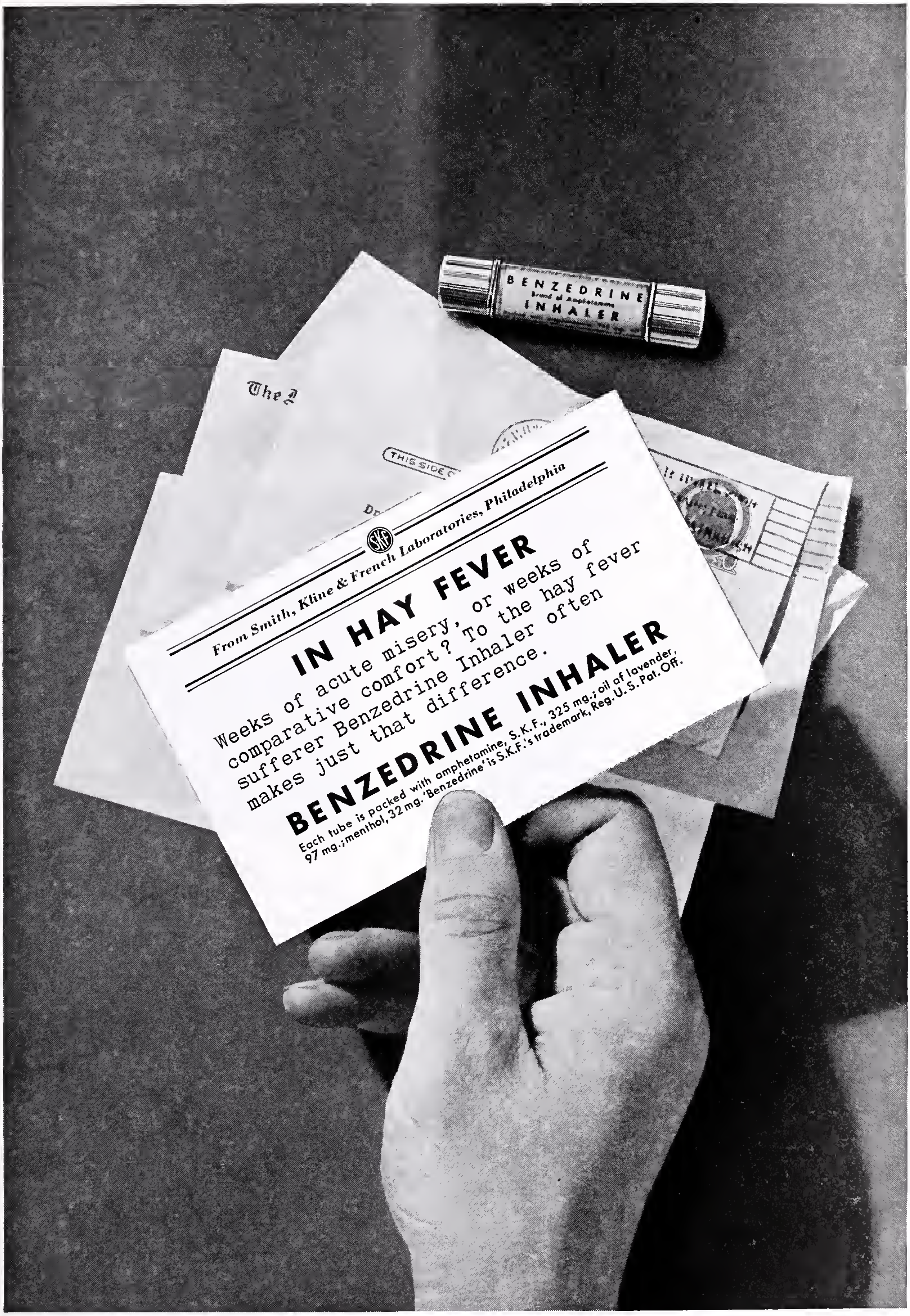

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LETTERS

Hoff Hall

Gentlemen:

On June the twenty-sixth we will lay the cornerstone of the new building of the Medical Field Service School known as Hoff Hall in honor of the late Colonel John Van Rensselaer Hoff. The building is on the site of an old structure erected in 1886 for the Indian Industrial School, which was as you probably know located at Carlisle Barracks. We expect to deposit documents and photographs of current military and medical interest in the cornerstone.

If you would care to send me an issue of The Pennsylvania Medical Journal, it would be deposited in the cornerstone. It shall be preferably the one coming out just before June the twentieth, on which day we will close the steel box for deposit in the cornerstone. We are of course receiving The Pennsylvania Medical Journal for our library here, but do not like to break the file for this purpose.

When the cornerstone of the old building was opened, we found a number of photographs and papers of considerable interest which were in excellent condition after more than 50 years in the steel box. They mostly concerned Indian education and of course there is nothing of medical interest. We are going to redeposit all of the material that was taken out of the old cornerstone, together with the new material about which I speak.

The new building is of most modern type and contains ample space for lecture rooms, amphitheater, offices, and a large library. The building is of native limestone, the stone for the construction having been actually quarried on the military reservation.

The Medical Field Service School of the army came into being just after the World War when medical officers and others realized the importance of special teaching in this type of work for newly commissioned Medical Department officers. Through the intervening 20 odd years there have been class after class of Regular and some Reserve and National Guard officers graduate at the school. At the outset of the present emergency the former system of regular classes was abandoned and instead classes of approximately 500 officers per month have been put through the school. In order to do this, temporary rooms and barracks had to be constructed and are now in use. Hereafter the new school building will answer, to a great extent, the existing needs.

Under separate cover I am sending you a press release about the dedication of the new building. The cornerstone will be laid by Maj. Gen. Jas. C. Magee, Surgeon-General, United States Army, a native of Pennsylvania and a graduate of the Jefferson Medical College. By a coincidence, he was not only a classmate of the commandant of the school, Brigadier-General Addison D. Davis, both at the Jefferson Medical College and at the Army Medical School, but the two officers are exactly the same age—both having been born on Jan. 23, 1883. The Surgeon-General will address the audience immediately after laying the cornerstone.

I hope that The Pennsylvania Medical Journal and the State Medical Society will be officially represented at the ceremony.

Edgar Erskine Hume,
Lieutenant-Colonel, M.C., U.S.A.,
Medical Field Service School,
Carlisle Barracks,
Carlisle, Pa.

A copy of the June issue of The Pennsylvania Medical Journal was sent to Lieutenant-Colonel Hume to be placed in the cornerstone. The Journal and the society were officially represented at the ceremony.—The Editors.

Insulin Prices

Gentlemen:

There are at present 3 licensees who manufacture and distribute insulin—Lilly, Sharp and Dohme, and Squibb. We have no information regarding Lilly, but we are informed that Sharp and Dohme are at present selling below cost, and for the year 1940 alone Squibb suffered a loss of over $20,000 on its insulin sales as established by an audit prepared by an independent firm of certified public accountants. Moreover, for the 10-year period from 1931, profit to Squibb was equivalent to less than 5 per cent of its total sales.

Until recently there was a fourth manufacturer of insulin, but because of extreme competition in this field this manufacturer was forced to drop its insulin business.

The cost of the glands used in the manufacture of insulin has increased 60 per cent since 1925 and 30 per cent since 1931. Despite this increase in the cost of glands, improvements in the cost of manufacturing methods have reduced the total cost of manufacturing the product 30 per cent since 1931.

During the same period, when manufacturing costs were being reduced 30 per cent, the selling price of our insulin was reduced 75 per cent. A 10 c.c., 40 unit vial of insulin, the standard vial sold, sold for $2.40 in 1925, $2 in 1931, and at present sells for 57 cents. This means that the average cost of a daily dose to the majority of diabetics was 31 cents in 1931 and is 8 cents today.

The present low cost of insulin to the diabetic emphasizes the competitive conditions in the insulin field, and the fact that this field is not one in which Squibb is profitably engaged. The 1940 losses and the low percentage of profit over the past 10 years reveal this clearly; and, in reality, there has been no profit over the past 10 years, since research and promotion of the product have consumed a disproportionate amount of time on the part of Squibb's large technical and sales staffs.

The selling costs assigned to insulin in making up its profit and loss figures are merely with respect to volume of sales and not with respect to the total time

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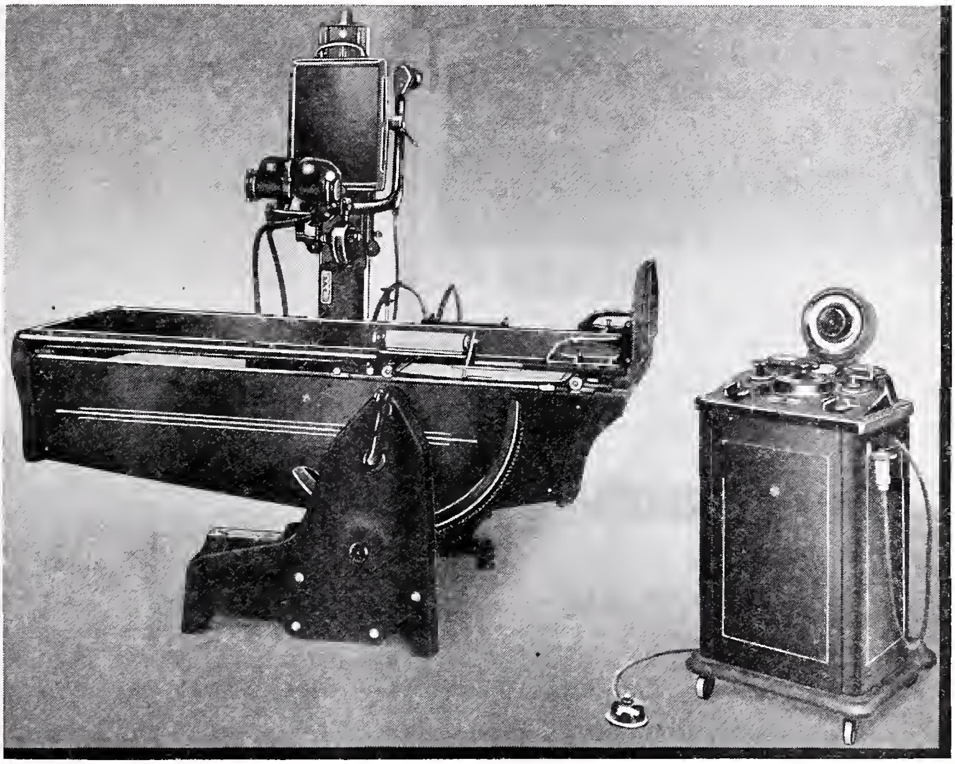

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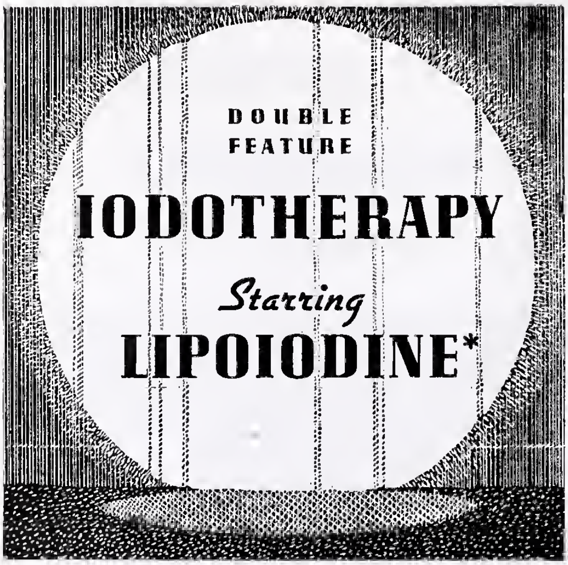

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Primers Still in Demand

Gentlemen:

In your State Medical Journal, May (1941) issue, page 1023, I noticed a reference to a primer issued by the State Society's Commission on Diabetes.

Would you be kind enough to let me know where a copy of this primer can be obtained.

Donald A. Forsyth, M.D.,
Hillsdale,
Ontario, Canada.

Shortly after mailing Dr. Forsyth a copy of the Primer on Diabetes, our supply became exhausted. A second edition of this primer will be ready for distribution within a few weeks.—The Editors.

Clinical Congress

Gentlemen:

I am sending you herewith a notice of the Seventeenth Clinical Congress of The Connecticut State Medical Society and I hope you will find it possible to publish it in an early issue of your Journal. In the past physicians from your state have attended our congress and we will be pleased to welcome them again this year.

Creighton Barker, M.D.,
Executive Secretary,
Connecticut State Medical Society,
New Haven, Conn.

The notice referred to in Dr. Barker's letter is published on page 1450 of this issue of the Journal.—The Editors.

THOROUGHNESS—THE ETERNAL CHALLENGE

If too busy to read of "startling physiologic recoveries following prostatic surgery for cancer" (pages 1391-1401), don't miss the discussion of Dr. Smith's stimulating paper. Read his challenging explanation of why *"we see more of these patients in Boston."*

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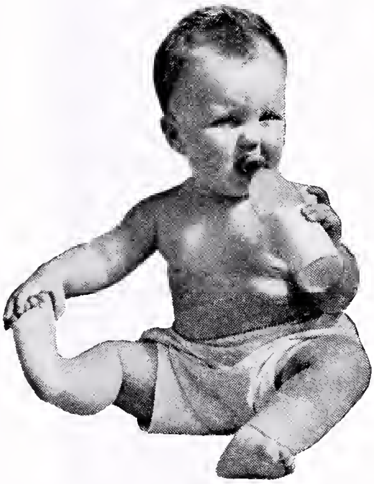

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Beaver	Philip F. Martsolf, New Brighton	J. Willard Smith, Beaver Falls	Monthly
Bedford	Edward A. Shields, Bedford	James R. Myers, Everett	Monthly
Berks	Chester K. Kistler, Reading	Clair G. Spangler, Reading	Monthly
Blair	Ralston O. Gettemy, Altoona	Harry D. Collett, Altoona	*Monthly
Bradford	J. K. Williams Wood, Troy	Stanley D. Conklin, Sayre	Monthly
Bucks	Albert A. Gonzalez, Croydon	J. Fred Wagner, Bristol	6 a year
Butler	Max S. Nast, Butler	Ralph M. Christie, Butler	*Monthly
Cambria	William B. Templin, Johnstown	Paul McCloskey, Johnstown	Monthly
Carbon	Susan Tomchik, Lansford	John L. Bond, Lehighton	Bimonthly
Centre	H. Thompson Dale, State College	†Le Roy Locke, Bellefonte	Monthly
Chester	Robert T. Devereux, West Chester	Joseph Scattergood, Jr., West Chester	Monthly
Clarion	Edward J. Keeling, Clarion	James M. Hess, Fryburg	Quarterly
Clearfield	Richard L. Williams, Houtzdale	George R. Taylor, Philipsburg	Monthly
Clinton	Robert F. Dickey, Lock Haven	Henry G. Hager, Jr., Lock Haven	Monthly
Columbia	Howard R. Rarig, Berwick	†Claude W. Ashley, Bloomsburg	Monthly
Crawford	Charles E. Mullin, Cambridge Springs	†John C. Davis, Meadville	Monthly
Cumberland	Charles M. Shaffer, Carlisle	Richard R. Spahr, Mechanicsburg	Bimonthly
Dauphin	Howard K. Petry, Harrisburg	Harvey A. Simmons, Harrisburg	*Monthly
Delaware	Franklin E. Chamberlin, Glenolden	†Augustus H. Clagett, Upper Darby	Monthly
Elk	Charles N. Silman, St. Marys	Fred E. Murdock, St. Marys	*Monthly
Erie	James A. M. Russell, Erie	Norbert D. Gannon, Erie	Monthly
Fayette	Fred H. Harrison, Connellsville	John N. Snyder, Masontown	Monthly
Franklin	Frank J. Corbett, Fayetteville	Ambrose W. Thrush, Chambersburg	Monthly
Greene	Vinton P. King, Waynesburg	William W. Bartholomew, Waynesburg	Monthly
Huntingdon	Frederic H. Steele, Huntingdon	Donald C. Malcolm, Alexandria	Monthly
Indiana	Frederick S. Shaulis, Indiana	Joseph W. Gatti, Indiana	Monthly
Jefferson	Sylvester S. Hamilton, Punxsutawney	Francis J. Trunzo, Punxsutawney	Monthly
Juniata	‡Penrose H. Shelley, Port Royal	Robert P. Banks, Mifflintown	Bimonthly
Lackawanna	John E. Manley, Scranton	John Lohmann, Scranton	Weekly
Lancaster	Harry C. Fulton, Lancaster	Charles P. Stahr, Lancaster	Monthly
Lawrence	H. Cyrus Harper, New Castle	William A. Womer, New Castle	Monthly
Lebanon	Edward L. Jones, Lebanon	J. DeWitt Kerr, Lebanon	*Monthly
Lehigh	Paul C. Shoemaker, Allentown	J. Frederic Dreyer, Allentown	Monthly
Luzerne	Joseph V. Connole, Wilkes-Barre	Lachlan M. Cattanach, Wilkes-Barre	*Semimonthly
Lycoming	F. Raymond Adams, Watsontown	Stuart B. Gibson, Williamsport	Monthly
McKean	Edward J. Phillips, Bradford	James E. Woodhouse, Bradford	Monthly
Mercer	Jonathan B. Perrine, Grove City	James A. Biggins, Sharpsville	*Monthly
Mifflin	Marlin W. Helfrick, Belleville	John R. W. Hunter, Jr., Lewistown	Monthly
Monroe	Moses J. Leitner, Bushkill	Harold B. Flagler, Stroudsburg	4 a year
Montgomery	George R. Irwin, Bridgeport	Walter J. Stein, Ardmore	*Monthly
Montour	Vincent J. Cassone, Danville	Sydney J. Hawley, Danville	Monthly
Northampton	Arthur B. Hamilton, Bethlehem	Dudley P. Walker, Bethlehem	*Monthly
Northumberland	George M. Simmonds, Shamokin	Mark K. Gass, Sunbury	*Monthly
Perry	William H Gelnett, Millerstown	Catherine Johnston, New Bloomfield	Bimonthly
Philadelphia	Louis H. Clerf, Philadelphia	Henry G. Munson, Philadelphia	*Monthly
Potter	Bernard S. Bretherick, Roulette	J. Irving Bentley, Coudersport	Bimonthly
Schuylkill	Peter B. Mulligan, Ashland	Charles V. Hogan, Pottsville	Monthly
Somerset	Bradley H. Hoke, Jr., Salisbury	Bradley H. Hoke, Meyersdale	Bimonthly
Susquehanna	James J. Grace, Montrose	Abram E. Snyder, New Milford	4 a year
Tioga	Charles W. Sheldon, Wellsboro	Robert D. Leonard, Tioga	Monthly
Venango	Cecil H. Hodgkinson, Oil City	Norman K. Beals, Franklin	Monthly
Warren	Tom K. Larson, Warren	Hilding A. Bengs, Warren	Monthly
Washington	George L. McKee, Burgettstown	Albert E. Thompson, Washington	*Monthly
Wayne-Pike	Hobart N. Owens, Hawley	H. R. Patton, Damascus	Bimonthly
Westmoreland	Paul G. McKelvey, Greensburg	Richard S. Cole, Greensburg	*Monthly
Wyoming	Van C. Decker, Nicholson	Arthur B. Davenport, Tunkhannock	Bimonthly
York	Herman A. Gailey, York	H. Malcolm Read, York	*Semimonthly

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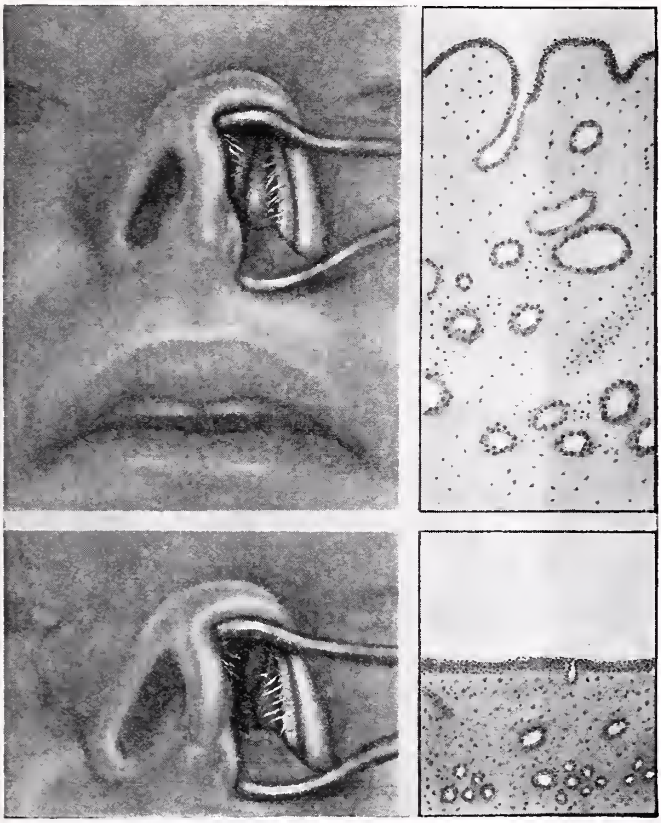
* Except July and August.

† Acting for Secretaries Hoffman, Moser, Benz, and Egbert who are in military service.

‡ Acting for President Dawe.

PATHOLOGY OF THE UPPER RESPIRATORY TRACT



(Above) Allergic Rhinitis
(Below) Five Minutes after application of Neo-Synephrin Hydrochloride

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Solution ¼% and 1% in saline solution (1-oz. bottles)
¼% in Ringer's Solution with Aromatics (1-oz. bottles)

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ELI LILLY AND COMPANY

Principal Offices and Laboratories, Indianapolis, Indiana, U. S. A.

Total Perineal Prostatectomy

GEORGE GILBERT SMITH, M.D.
Boston, Mass.

ON July 15, 1936, a man of 76 was referred to me by Dr. Horace Binney because of hematospermia and frequent urination. Dr. Binney had seen him 11 years previously because of blood in the semen; he had seen him in 1930 and again on the day he referred the patient to me. In Dr. Binney's opinion the patient's prostate had become larger and harder than it was at earlier visits.

My note on the prostatic examination reads, "Prostate slightly enlarged. There are hard, smooth areas in each lobe, close to the pelvic wall, but in the midline the gland is soft. The prostatic secretion is slightly bloody. A stained smear shows numerous spermatozoa, some round cells, no pus cells. The gland feels inflammatory but may be malignant. I would like to see the patient again in 3 months."

The patient did not return in 3 months, but 4 years later (July 25, 1940) he came back. His general health had been excellent. He had been having spells of frequency and urgency; urination was sometimes rather slow. He had to void once or twice at night, sometimes more often. He had noticed a little discomfort in the perineum.

Examination showed him to be an unusually well-preserved man for his years. (He was now 80.) The blood pressure was 180/90. The heart sounds were clear, there were no abdominal masses, no palpable glands, and no edema of the legs. The urine was clear in spite of a residuum of 13 ounces. By rectum, the prostate felt slightly enlarged; the upper border was clearly defined, the lateral sulci distinct, the apex separated from the perineum by at least one-half a centimeter. The consistency of the gland was variable, but in places the tissue felt suspiciously hard. The secretion secured by gentle massage showed a number of motile spermatozoa and again no pus. The vesicles were not indurated. It seemed to me that the prostate was definitely malignant and that the growth was confined to the gland itself.

What procedure should have been advised in this case? The residuum of 13 ounces called for relief of the obstruction. In spite of the patient's age, he seemed good for at least another 10 years provided his prostatic cancer could be controlled. The possibility of complete removal of the cancer appeared likely. Transurethral resection would have removed the obstruction to urination but would not have checked the progress of the disease. Although the cancer appeared to be growing slowly, its rate of growth might become more rapid. X-ray, although sometimes effective, could not be relied upon to control the disease. Colby's experience with the million-volt machine at the Huntington Hospital and ours with a machine of the same voltage at the Massachusetts General have shown that in only a relatively small percentage of malignant prostates is this form of treatment effective. Radium, which I had used in a series of 42 prostatic cancers, had caused a great deal of suffering and in only a few cases had it appeared to cause a regression of the growth. Even after extensive irradiation, living cancer cells were found in the prostate. This experience was in agreement with that of Geraghty,[2] who found some cancer tissue apparently unchanged in every prostate that was treated by radium and later subjected to microscopic examination.

The obvious conclusion was that total perineal prostatectomy offered this patient the best chance. He entered the Phillips House, where further studies showed excellent renal function, no osseous metastases, and electrocardiographic changes consistent with moderate sclerosis. Cystoscopy showed no evidence of malignancy; there was a well-marked median bar and moderate intra-urethral hypertrophy of the lateral lobes. The urethral length was somewhat increased. The bladder was drained by an indwelling catheter for 5 days and on Aug. 22, 1940, under gas-oxygen-ether anesthesia, a total perineal prostatectomy with removal of vesicles and bladder neck was done. The patient was

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Read before the Section on Urology of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

discharged 24 days later after a smooth convalescence. His urinary control was fair and he writes me that it is improving. The pathologic report stated that the gland weighed 66 grams and showed adenocarcinoma. "The tumor is composed of well-differentiated adenocarcinoma, the glands being well formed and showing little undifferentiation. There is definite perineurial invasion but no evidence of hyperplasia. Mitoses are infrequent. Grade II."

This case may serve as a text for the remainder of the paper. It is my purpose to discuss the pathologic conditions found in a series of similar cases, the selection of patients for this operation, the technic employed, and the results obtained. It is only when one has acquired a fairly comprehensive knowledge of all these aspects of the question that he is able to estimate the applicability of this method of treatment to the individual patient.

Pathology

The neoplasm which is commonly found in the prostate is an adenocarcinoma. Upon microscopic study, the growth may show considerable variation even in the same patient; in some instances there are well-developed glands, in others the cells are arranged in sheets, clusters, or strands. The characteristic stony hardness, according to Young,[8] is due to the presence of fibrous tissue. Young mentions a rare type of growth in which there is so little stroma that the gland feels soft to the examining finger.

Pathologists are not agreed as to the possibility of grading prostatic cancer. Moore,[5] for example, says that mitotic figures are not common even in surgically removed prostatic cancer and that they are of no value in determining the invasiveness and rapidity of growth.

Dr. Benjamin Castleman, assistant pathologist at the Massachusetts General Hospital, kindly reviewed the sections of prostate from 17 cases in which total removal was carried out, and recorded his opinion as to the grade of malignancy. He was unaware of the end results in this group of patients; it is interesting to check his grading against the final outcome.

His description of a Grade I cancer is as follows: "The tumor shows very well-differentiated glands with no perineurial invasion."

In contrast to the above picture, let me give his description of a Grade IV cancer. "The tumor is very poorly differentiated, showing no glandular arrangement. The cells are arranged in solid masses, are very atypical, show extensive perineurial invasion and marked infiltration of the stroma. The lymphatics contain tumor but the seminal vesicle is not involved."

Tumors graded II or III naturally fall between these two examples. The criteria noted by Dr. Castleman in grading these tumors are the presence or absence of well-formed glands, the degree of differentiation of the cancer cells, and their tendency to invade the stroma. Numerous mitotic figures, when present, occur in the more malignant tumors but may be absent even in cancers of Grade IV. Perineurial involvement if extensive is regarded as an additional evidence of high malignancy.

Table I

Recurrence in Graded Cases

Grade	*No. of Cases*	*Recurrence*
I	2	1
II	7	1
III	5	4
IV	3	3
	17	9

The correlation between Dr. Castleman's grading and the end results in this small series of cases is shown in Table I. Of those patients graded I or II, 2 in 9 (22 per cent) developed recurrences. Of those 8 patients graded III or IV, all developed recurrences except one; the time elapsed since his operation is only 1½ years. It would appear that Castleman's grading was fairly accurate.

A conspicuous feature in prostatic cancer is the involvement of the perineurial lymphatics by tumor cells. This phase of the problem has been studied recently by Graves, Warren, and Harris,[4] who point out that the perineurial lymphatics are "pathways leading the cancer into intimate contact with cortical bone. From thence, growth through the ostia is relatively simple and invasion of the bone follows." Pain in the perineum, they believe, is due to this invasion of the perineurial lymphatics, and pain in the bones may be due to periosteal involvement before the x-ray shows any change in the bone itself.

Sections from 34 totally removed prostates have been studied in an attempt to ascertain whether the degree of perineurial involvement bears any relation to the end result. My thanks are due to Dr. Shields Warren and Dr. Nathan Friedman for this study. The results are given in Table II. Although far from conclusive, these results show that in the patients with slight or no perineurial involvement, there was recurrence in 40 per cent. In those with moderate or extensive involvement, recurrence occurred in 54 per cent. In 8 patients in whom

Table II

Recurrence and Perineurial Invasion

Extent of Invasion	*No. of Cases*	*Recurrence*
None	13	5
Slight	2	1
Moderate	4	1
Marked	7	5
Degree not stated	8	5
	34	17

the degree of involvement was not stated, there was recurrence in 62 per cent. It is worth noting that in 2 cancers placed in Grade IV no perineurial involvement was found, and in 2 graded as III the involvement was only slight. It would seem, therefore, that as a criterion of malignancy this pathologic feature is of no great value.

In a discussion of prostatic cancer it is important to consider the mode and place of origin of the neoplasm. Three authorities—Geraghty,[2] Rich,[6] and Moore[5]—agree that cancer and hypertrophy in the prostate are two distinct processes. Geraghty[2] found hypertrophy associated with cancer in 75 per cent, Rich[6] in 70 per cent. The former states that in every instance but one in a series examined by him the carcinoma began in the posterior lobe. Rich found a decided tendency for very early cancer to be situated either laterally or posteriorly in the tissue near the capsule. The nonhypertrophied senile tissue and atrophied glands outside the expanding nodules of hypertrophy are, he says, perhaps the favorite site of origin.

Moore,[5] in a very careful study of prostates removed at autopsy, found 63 cancers in 375 prostates; 73.5 per cent arose in the posterior lobe, 8.8 per cent in the lateral lobes, and 14.8 per cent in the anterior commissure. In all cases except two which arose in an area of benign enlargement, the area of cancer was surrounded and infiltrated by glands typical of senile atrophy. Moore says, "We believe that cancer of the prostate in the vast majority of cases results from stimulation and autonomous proliferation of epithelium which has already undergone atrophy." The process, Moore goes on to say, is not infrequently multicentric; extension of the growth is cephalocaudad just beneath the capsule.

Young[8] states that the line of extension is first to the vesicles, second to the membranous urethra, third to the bladder, and last to the rectum. Once outside the prostate and vesicles, the growth extends to the pelvic bones and spine, the iliac glands, the para-aortic glands, the liver, and the lungs. At the last, general carcinomatosis develops, unless, as Graves and Militzer[3] point out, pyelonephritis rings down the curtain. This condition was the direct or the most important contributing cause of death in 41 per cent of a series of 81 cases investigated by them.

Diagnosis

The diagnosis of advanced cancer of the prostate offers no difficulties. It is not so easy to be sure of the diagnosis in early cases, and it is from this group that we must select the patients suitable for total prostatectomy. The statement is often made that it is impossible to make the diagnosis of carcinoma until the disease has progressed so far that radical removal is out of the question; this statement has been disproved in numerous instances. It may be that frequently one cannot be certain of the existence of malignancy, but he may suspect it so strongly that he is justified in advising perineal exploration and biopsy of the suspected area. This procedure has seemed to me so much more satisfactory than a needle or punch biopsy that I have never attempted the latter.

As further evidence that the diagnosis of early carcinoma is not too difficult, I might say that in perhaps a half dozen instances I have had referred to me by enlightened internists or general practitioners men with prostates that to them felt suspiciously firm. In several of these cases, I did not, at their first visit, feel sufficiently sure of the diagnosis to advise operation, although later the diagnosis of malignancy proved to be correct.

One's suspicion should be aroused if there is an area in the prostate which feels definitely harder than the rest of the gland. Such an area is usually situated to one side of the midline, on the lower border of the gland, and characteristically gives the impression that the prostate has a square edge rather than a gently rounded border. In more advanced cases the entire gland may be stony hard. Nodularity of the prostatic surface is not a frequent feature in these early cases.

The condition most likely to be confused with early malignancy is fibrosis. There are, in my office practice, several young men whose prostates are hard enough to be thought malignant, but the age of the patients and the fact that the condition has persisted for several years without showing any change serve to allay my uneasy feeling that I may be overlooking an early carcinoma.

I know of no measure other than rectal palpation and biopsy that will assist in the diagnosis of early prostatic cancer. The growth at this stage causes no symptoms and cystoscopy shows no typical lesions. One must depend on the *tactus eruditus* alone.

It has seemed to me very helpful to examine the patient both bimanually and in the conventional position. By the former method, the examiner can push the prostate downward toward the rectal finger; the exact size of the gland may be more accurately determined as well as the degree of fixity and the extent of invasion of the vesicles. I have not infrequently changed my diagnosis of the prostatic condition because of the information obtained by bimanual palpation. Young[8] speaks of the value of rectal palpation of the prostate while a rigid instrument is in the urethra. If the posterior lobe is thickened along the midline, this method of examination will show the thickening; but if the growth is situated to one side of the midline, it will be less easy to recognize when there is a sound in the urethra. It is advisable to do the examination both with and without the instrument.

In the series of 71 total prostatectomies upon which this paper is based, the diagnosis of carcinoma was made before operation in 68. In 14 of these the diagnosis was sufficiently uncertain to make confirmation by the pathologist desirable; frozen sections on tissue removed from the suspected area were done. In 3 patients the malignancy was not suspected until the prostate was exposed and enucleation of the lateral lobes attempted. One advantage of the perineal operation is that if unsuspected cancer is discovered. it may be possible, as it was in these 3 patients, to remove the entire gland.

There were 3 other patients, not included in this series, on whom total prostatectomy was done under the mistaken diagnosis of cancer. In one of these the frozen section was reported as showing carcinoma, but later examination of the gland failed to confirm this report. I am still a bit uncertain as to which report was correct. The nodule of cancer may have been removed when the biopsy was done, or the later examination may not have included the malignant area. At any rate the patient recovered and is in good health two years after operation. Another prostate in this group showed only fibrosis.

During the past 10 years there have been a few instances—I remember only two—in which a prostate removed in the ordinary way and not suspected of being malignant proved on microscopic examination to contain areas of carcinoma.

Selection of Patients

When I first began to do total perineal prostatectomies, some 20 years ago, I employed the operation in a number of patients whom today I would consider unsuitable for so radical a procedure. The development of transurethral resection, furthermore, has given us a method of relieving these patients of their obstruction for a few years at least; if it is probable that the patient will not live more than 3 or 4 years, he should be subjected to resection rather than to total prostatectomy.

In the selection of patients for total prostatectomy, one should consider first the local and second the general condition. My present feeling is that the operation should not be attempted unless the growth appears to be confined to the prostate gland and does not, as far as can be ascertained, involve the outer portions of the vesicles. The rectum should be movable over the prostate and not adherent to it. The upper border of the gland should be clearly defined and the base of the bladder above it should be free of induration. There should be a sulcus between the prostate and the pelvic walls laterally and a clearly defined space between the apex of the gland and the perineum. The gland as a whole should not be too fixed in the pelvis, although I have found that some prostates which I thought were rather fixed have actually been free from neoplastic adhesions.

The bladder base and trigone should show no nodules of tumor, but lesions in the prostatic urethra are not a contraindication to total prostatectomy. Persistent pain in the pelvis or sacral region should, I think, be seriously considered as indicating early metastasis; this symptom might throw the decision against the radical operation.

As regards the general condition of the patient, his age, cardiac condition, renal function, and presence or absence of demonstrable metastases are the important factors. Although the patient whose case was described at the beginning of this paper was 80 years of age, his condition was so good that I believed his age could be disregarded. It is my belief that as a rule no one over 75 should be subjected to this operation. Of the 5 hospital deaths in this series, all were over 75. One in fact was 84; he died of shock. His death, which occurred in 1931, was the last operative fatality that I have had following total prostatectomy, and was influential in deciding me against operating upon men over 75 years of age.

The operation, although it usually causes little shock, requires in my hands about an hour and a half for its completion. The patient's heart should be fairly sound, not only because of the operative load but because the radical operation is contraindicated if cardiac death within a few years is a probability.

Search for metastases should be made by careful physical examination and by x-ray studies. The chest should be included as well as anteroposterior and lateral views of the dorsal and lumbar spine. Intravenous urograms should be made; they may show displacement of the ureters caused by enlargement of the para-aortic glands.

Technic

The technic of total perineal prostatectomy which I have used is essentially that described by Young[8] in 1905. For a full description of the operation, illustrated by the beautiful drawings of Brödel, let me refer you to Young's *Urology.* The operation as I do it begins with the exposure of the prostate by means of a curved preanal incision. If this is carried across the perineum not more than 2 cm. anterior to the mucocutaneous anal margin, the operator will be less likely to become involved with the transversus perinei muscles; it is important to carry the dissection posterior to their lower margin, as they are of value in the restoration of urinary control. The rectum is separated from the prostate as in the ordinary perineal prostatectomy. The membranous urethra is incised upon a sound close to the apex of the prostate and a Markley tractor passed to the bladder and there the blades are opened to form a T. The prostate is then freed laterally and posteriorly. If the diagnosis is in doubt, a portion of the indurated area is excised for immediate examination. The posterior exposure of the prostate is done by cutting across the posterior layer of the fascia of Denonvilliers and stripping it off the gland. At the upper border of the posterior surface of the prostate, where the vesicles begin, the fascia is intimately adherent and does not strip easily. It may have to be dissected free along this transverse line.

The next step is the severing of the membranous urethra. The incision should be made at least half a centimeter above the point where the membranous urethra passes through the upper layer of the triangular ligament, so that there will be a cuff of urethra to suture to the bladder neck. The apex of the prostate is then pulled downwards by means of the tractor and the anterior surface of the gland is easily freed by blunt dissection. This dissection is carried upwards until the anterior wall of the bladder, distinguishable by its muscle fibers, comes into view. The tractor is rotated 90 degrees so that the anterior blade may be felt through the bladder wall. The wall is incised against the blade and the incision is carried downward on either side close to the bladder neck.

At this point I remove the tractor, grasp the anterior commissure of the bladder neck with a lion-jaw, angulated clamp, and by rotating the prostate downward, expose the trigone. The lower ends of the lateral bladder wall incisions are joined by an incision across the trigone; the ureteral orifices should be in view so that the incision lies below them. The trigone is stripped off the underlying vesicles and abandoned in the depths of the wound. A right-angled clamp is passed between the vesicles, above the intervesicular plateau; this procedure is facilitated by a free exposure of the vesicles on their posterior aspect. There is some danger of opening the peritoneum during the freeing of this area; I have done it at least 3 times, but in only one instance was there any peritoneal reaction. Whenever I have known that this has been done, the peritoneum was immediately sutured. Each vesicle is then freed by blunt dissection, the blood supply at the tip clamped, and vesicles and prostate removed. Bleeding points are tied, a temporary pack placed in the vesicular pockets, and repair of the bladder neck begun.

A No. 18 French, soft rubber catheter of good quality is passed through the urethra and both ends are grasped in a clamp. By drawing the catheter forward, the anterior wall of the stump of the membranous urethra is brought into view. With Young's boomerang needle-

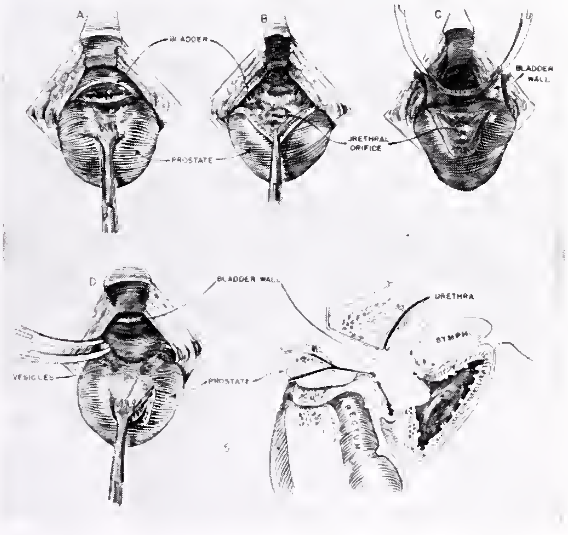

Fig. 1. Removal of prostate.

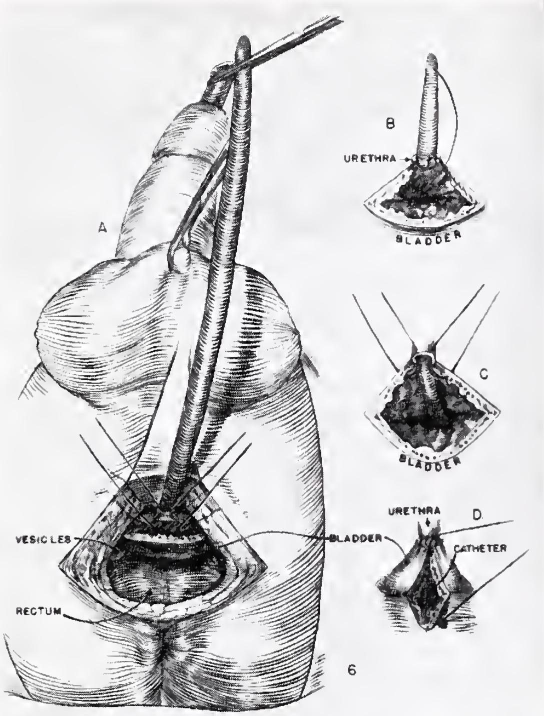

Fig. 2. Suture of bladder neck to stump of urethra.

holder a No. 0 chromic catgut suture is carried through the anterior wall of the urethra and the midpoint of the anterior margin of the bladder neck. This suture is tied and another suture is placed on each side of the first. These sutures are the keystone of the repair; they unite the bladder neck securely to the urethral stump. A lateral suture is then placed on each side and the tip of the catheter is inserted into the bladder. The catheter is adjusted and secured by a stitch at the urethral meatus.

For the remainder of the closure of the bladder neck my technic differs from Dr. Young's. I suture the central point of the trigone to the posterior lip of the urethral stump; this leaves 2 slits in the bladder base extending downward and outward from the line of suture. The edges of both may be approximated by 2 or 3 sutures, care being taken not to include the ureters, or one may be only partly sutured and a perineal tube inserted through it into the bladder. In a few cases I have inserted a perineal tube through a stab wound in the bladder base above the trigone; the tube tends to hold the trigone forward, thereby removing tension from the sutures.

It is arguable whether a perineal tube is necessary. Usually the amount of bleeding within the bladder is negligible. A comparison of the length of stay in the hospital of 17 patients drained by perineal tubes with that of 11 patients without perineal tubes showed an average of 28.5 days for the group with tubes and an average of 25 days for the group without tubes. In the patients whom I have operated upon within the past few years, I have usually omitted the tube. I still believe there is something to be said for the more thorough drainage. Small cigarette wicks are then left in each vesicular pocket and the perineal body is restored as in the ordinary perineal operation.

Operative Complications

A consideration of the technic of uniting the bladder neck and the urethra explains why it is so essential that the growth should not have extended into the membranous urethra. If the membranous urethra has to be removed, the bladder must be sutured to the triangular ligament, with great danger of destroying the nerve supply to the sphincter. In such a situation one might well apply the technic originated by Dr. Samuel A. Vest,[7] in which 3 mattress sutures are placed in the anterior third of the bladder neck. The lateral sutures are carried through the muscles of the perineum and tied. The anterior, central suture is carried through the triangular ligament and each end is tied to the adjacent lateral suture, thereby avoiding constriction of any part of the external sphincter.

A distressing complication which ought never to happen, but which occurs in 1 or 2 per cent of my perineal operations, is a tear in the rectum. I believe that forcible retraction is usually the cause of this accident; I always examine the rectum at the conclusion of the operation to make certain that this has not occurred. It happened twice in this series of cases; in one patient several operations were necessary before the perineum was healed. In the other I took

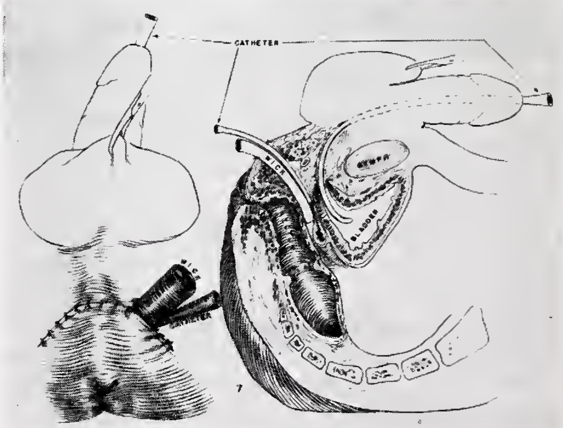

Fig. 3. Cross section of pelvis to show anastomosis of bladder neck to urethra.

down the wound, sutured the rectal tear, drew the suture line to one side, and fastened it to the undersurface of the levator ani. I then approximated the levators carefully and did not leave in a perineal tube; the wound healed without any fecal fistula and the patient left the hospital 3 weeks after operation.

It is very important to fasten the catheter securely in the urethra. I leave it in place for about 2 weeks; by that time perineal leakage has ceased in the great majority of cases, and the bladder neck has become firmly united to the urethral stump. Postoperative strictures at this point occur occasionally (in about 4 per cent in my series) and sometimes local recurrences of the growth develop in this region.

Results

I have done this operation more or less as described in 71 patients. Of the patients with prostatic cancer who have come to my office within the past 20 years, about 20 per cent were thought to be suitable for total prostatectomy. This percentage is larger than that usually given, perhaps because some of the patients were sent to me because of my interest in this particular operation.

TABLE III

AGE OF PATIENTS OPERATED UPON

Years	*No. of Patients*
41-50	1
51-60	11
61-70	39
71-80	17
81-84	3
	71

The age of these patients is shown in Table III; the youngest was 49, the oldest 84. The symptoms of 50 patients are shown in Table IV. It is worth noting that bleeding occurred in but 5; the histories of 35 state definitely that there had been no hematuria. Retention of varying degrees was the outstanding symptom and caused the usual complaint of frequency and difficult urination. Nine had dysuria without retention. In 7 patients, be it noted, the condition was discovered on routine examination.

TABLE IV

SYMPTOMS

	No. of Cases
Hematuria	3
Bleeding from urethra	2
Dysuria not due to retention	9
Retention	26
Perineal pain	1
Subacute urethritis	1
Pain in right kidney region	1
Slow stream	1
Found on routine examination	7
	51

The type of anesthesia employed is shown in Table V. In 1935 the modern rebreathing method of giving nitrous oxide, oxygen, and ether came into common use; the results obtained by this method were so satisfactory that the use of spinal anesthesia was abandoned.

TABLE V

ANESTHESIA

	No. of Cases
Spinal	34
Spinal and ether	4
Sacral	1
Sacral and ether	3
Gas-oxygen	1
Gas-oxygen-ether	12
Ether	15
Not recorded	1
	71

Table VI gives the weight of the tissue removed in 21 cases. Slightly over one-half of the prostates weighed 50 grams or less, a fact which would seem to prove that hypertrophy of any marked degree was an infrequent accompaniment of cancer.

TABLE VI

SIZE OF GLAND

Grams	*No. of Cases*
11-20	1
21-30	4
31-40	4
41-50	2
51-60	6
61-70	1
91-100	2
101-110	1
Size not stated	50
	71

The results obtained are shown in Tables VII to XIII. It is worthy of comment that of those who died of recurrence 9 lived over 5 years, the majority being in good health until a few months before death. The long period between operation and disability from recurrence was at times remarkable. One patient, for example, was seen by me 9 years after operation and appeared to be in excellent health. Rectal examination, however, showed a small area of induration at the base of his bladder. He died of cancer 9 months later. Colston[1] reports a remarkable case—a patient on whom this operation had been done died 15 years later of coronary thrombosis. Autopsy showed beneath the bladder a mass 5

Table VII

Results

	No. of Cases	Average Life
Died in hospital	5	
Died of recurrence	35	3⅓ years
Died of other causes	7	4¾ years
Alive but with recurrence	4	7 years
Apparently well	20	4 years

by 3 cm. in which was found definite adenocarcinoma. As Colston points out, the tips of the vesicles were not removed because they appeared not to be involved, but pathologic examination showed clearly that they were the seat of the cancer.

Of the 35 patients dying from recurrence, 7 are known to have developed paraplegia. It would be interesting to know whether the spinal lesion was secondary to a local recurrence, or whether the metastasis antedated the prostatectomy, but in most of these cases, as the end results had to be obtained through the kindly offices of the town clerk, details were lacking.

Table VIII

Hospital Deaths

No. of Cases	
1	Carcinomatosis—3 months after operation
1	Heart block—2 weeks after operation (patient 82 years of age)
2	Shock (one a man 84 years of age)
1	Cardiac failure—4 days after operation
5	

Of the 4 patients living but with recurrence, 2 developed urinary obstruction, which is a complication that occurs infrequently after this operation. In one the obstruction was due to definite recurrence at the bladder neck. The other, 11 years after prostatectomy, required cystotomy because of obstruction to the perineal urethra. In the region of the triangular ligament there was a firm mass which had changed very little over a period of several years. It probably was malignant.

Table IX

Patients Dying of Recurrence

Time After Operation	No. of Patients
Under 1 year	5
1-2 years	10
2-3 years	4
3-4 years	3
4-5 years	4
5-6 years	1
6-7 years	2
7-8 years	5
9-10 years	1
	35

A third patient in this group is in fairly good health and has no symptoms, but rectal examination shows a smooth hard mass 2.5 x 1 cm. on the right side of the bladder base.

Table XIII shows the time that has elapsed since operation of those patients who apparently have no recurrence.

A review of these end results shows that 21 patients lived 5 years or more after operation, with an average length of life of 8 years. An attempt has been made in some of the patients with local recurrence to treat the growth by the insertion of radon seeds or by x-ray. The results have been unsatisfactory, probably because of the large amount of fibrous tissue which is present.

Table X

Location of Recurrence

Bones	No. of Cases	Visceral	No. of Cases
Generalized	4	General	1
Rib	1	Iliac glands	1
Spine	9	Lung	1
Pelvis	3	Bladder	1
		Abdominal glands	3
		Liver	3
		Local	15

Seven patients developed paralysis from spinal metastases.

The question of urinary control is sure to come up whenever this operation is discussed. In this group of 71 patients, 5 died in the hospital, in 3 instances there is no record as to the control, and one, in whom radium had been used, had a perineal fistula. Seven patients (11 per cent) had poor control, necessitating the wearing of a urinal. Of these, 2 had cerebrospinal syphilis and one had cerebral thrombosis. Eleven (18 per cent) had fair control; sometimes they leaked, sometimes they were dry. They all had enough leakage so that they had to wear a cloth. Twenty-four (38 per cent) had "good" control with occasional leakage of a few drops on coughing or on exertion. Twenty (32 per cent) had perfectly normal urinary control and in fact could hold more urine than the average male. In the last 26 cases, control was good or perfect in all but one case; he had tabes. Not infrequently control is not regained to a satisfactory point for a number of months, but if the patient is given exercises to train his sphincter and sticks to them, he can accomplish a great deal in that direction.

In this series there were a number of interesting pathologic findings. In 4 patients the growth appeared to originate in the vesicles. The prostate in one case showed no carcinoma,

TABLE XI

DEATH FROM OTHER CAUSES

Cause	*Time After Operation*
Cardiac disease	2 mos.
	2 yrs., 6 mos.
	3 yrs., 9 mos.
	4 yrs.
	9 yrs.
Cerebral hemorrhage	6 yrs. 9 mos.
Senility (85)	7 yrs.

although the vesicles did. In another case the growth—a scirrhous carcinoma—was more evident in the vesicles and showed only in small areas in the prostate. All 4 of these patients died of recurrence, 3 of them in less than 2 years, and one after 7 years.

TABLE XII

LIVING BUT WITH RECURRENCE

Location of Recurrence	*Time After Operation*
Perineum	11 years
Bladder neck and iliac glands	8 years
Small local recurrence	5 years
Extensive local recurrence	3 years

One prostate proved to be a lymphoblastoma; the patient has done well. Another prostate, removed from a man who had had a tumor of the bladder apparently cured, proved to be the seat of an epidermoid carcinoma.

TABLE XIII

APPARENTLY WELL

	No. of Cases
Under 1 year	4
1-2 years	4
2-3 years	3
3-4 years	1
4-5 years	3
7 years	1
9 years	2
12 years	2
	20

Preoperative x-ray treatment was given in 2 patients in whom the process seemed too advanced for total prostatectomy. After treatment the condition improved to such an extent that total prostatectomy was done. In one of these patients, recurrence developed within a year; the other patient lived 3½ years. I doubt if this operation is ever indicated under conditions such as these.

In looking over this series of patients in retrospect, I am impressed by the fact that, especially among the earlier cases, there were some upon whom I would not attempt this operation today. The indications for total prostatectomy have become much more definite in my mind. Yet, when these indications are clear, the operation, I believe, is one of the most satisfactory in the whole field of urology.

Conclusions

1. Seventy-one cases of total perineal prostatectomy are reported.

2. In 17 cases graded by the pathologist, 22 per cent of these placed in Grades I or II developed recurrences. Of those graded III or IV, 87 per cent developed recurrences.

3. Perineurial involvement, unless it is extensive, does not indicate a bad prognosis.

4. The indications for and the technic of total perineal prostatectomy are given.

5. Of the 71 patients, 5 died in the hospital, 35 died of recurrence of their cancer, 7 died of other causes, 4 are alive but with recurrence, and 19 are living apparently without recurrence.

6. Twenty-one patients have lived 5 years or more, with an average postoperative life of 8 years.

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ABSTRACT OF DISCUSSION

DAVID M. DAVIS (Philadelphia): This presentation represents, first and foremost, devotion to a certain type of operation over a sufficient period of years to obtain results worth presenting. Even a fairly large number of cases could not show the results unless followed over a long period of time. It must be remembered that this is carcinoma surgery, and we cannot expect to cure every case. If 25 to 30 per cent represent clinical 5-year cures, it is extremely worth while and away ahead of anything else in the treatment of prostatic cancer.

An unusually large number of cases suitable for this operation has come to Dr. Smith. Since I came to Philadelphia I have been looking for cases eligible for this operation, but I have seen only one that seemed suitable. This man refused operation at the time. The hard mass that existed on one side of his prostate eventually proved to be nonmalignant.

Why do we not see these cases when they are suitable for operation? We can only guess. I suspect that patients are not carefully examined by general practitioners as far as the rectum and the prostate are concerned. Too often the doctor looks only for a greatly enlarged prostate, and ignores the small nodules characteristic of operable carcinoma of the prostate. Too often the examination is omitted altogether unless severe obstructive symptoms are present. Those of us who are teachers can at least emphasize these points to the undergraduate medical students, which may improve conditions in the future.

Leon Herman (Philadelphia): I have had no personal experience with the technical surgery as described by Dr. Smith. For a long time we have been trying to convince ourselves that there is real justification for the performance of this extensive operation. There is some doubt whether the morbidity and length of life associated with radical prostatectomy compare favorably with these factors in cases treated palliatively. Dr. Smith's statistics are quite convincing, however, and it is encouraging to find that the incidence of incontinence following the procedure in his hands is so small. However, the number of real cures remains meager, and comparatively few cases are suitable for the operation. The fact is, nevertheless, that there are no other means of curing prostatic cancer, and I am inclined to believe that the operation is indicated in the younger group of patients with early malignancy.

Alexander Randall (Philadelphia): I am not taking exception to previous remarks in this discussion, but I have to tell you a story which made me look rather differently on this problem. I was at a small social gathering, where we were all standing around enjoying cocktails, when in came a man and his wife. I knew that 3 years before she had been operated upon for extensive pelvic malignancy, and I could not refrain from whispering to her husband, "George, your wife looks wonderfully well." "Of course she looks well!" he shouted, so that all in the room could hear. And he continued shouting, "You doctors are responsible for this terrible aura you hang over malignancy. There is my wife. She has had cancer and she is well."

This hit so hard that I began to wonder if we are not responsible for this hang-back picture. Here, today, we have heard of 25 per cent cures, and we all say, "Is it not wonderful that Dr. Smith can do that?" There are many different pictures. One of the first patients I saw when I started private practice in 1912 was a man with carcinoma of the prostate. In 1903 he had a preoperative diagnosis of cancer by Dr. Young, in a day when he was not attempting a radical removal. He had done what he called a conservative perineal prostatectomy (and by it he had taught us to take out everything available), and here, 9 years later, was a healthy-looking man, living a normal, active life, troubled only by the periodic necessity for a catheter. This benignancy, I know, is what made Dr. Young feel that he could cure carcinoma, and was the incentive that made him enter the field with this surgery about which you all know.

When you think anatomically and physiologically, when you conceive that such surgery will cut the urethra, will remove the prostate and with it an inch and a half of urethra, will take a big piece away from the base of the bladder, and will take away the vesical sphincter, no one blames the surgeon for holding back; but do we credit the surgeon who went ahead? To me it is one of the most startling physiologic recoveries that I have ever seen in surgery. These men do get well. They get physiologically well, and they have bladder control. One was in the office last week, 2½ years after operation. He has gained 6 pounds and is doing everything. He was 68 years of age at the time of operation.

It behooves us to say that we must perform this operation because it can be done. Yet into the picture comes that old feeling again, voiced by Dr. Herman, "Can I do it? Do I want to take the responsibility?" I know every one of us has felt exactly the same thing. I was cured by seeing Dr. George Gilbert Smith, of Boston, do it for a group of visiting surgeons—do it easily and beautifully.

I have often wondered whether there is not a suprapubic approach, but I cannot see how it could improve Young's technic. Since my conversion by watching Dr. Smith work, we have done 6 total perineal prostatectomies. I am glad to be able to report no fatalities to date.

This work is our duty. That is what we are here for. We must stop putting these patients on the old palliative treatment that will not cure. We must be radical. In 3 cases I have varied the technic. In one of them, a man in his early sixties, there was a very definite single nodule, and when the prostate was exposed perineally, it seemed to be a local involvement. I took a large electric loop and removed it in one piece, following which I took out 2 or 3 more loopfuls and closed the incision. He had a trivial residuum at the time. He went through 4 months in comfort, then had increasing residual urine, and in my absence Dr. Hughes performed a transurethral resection. I think that this modification in technic might permit a very easy prostatectomy in early cases, and it should be perfectly safe to cut that way. In another case like that I do not think I would hesitate to do a fairly radical prostatectomy by this method.

The second modification I have done twice. After severing the urethra, and after dissecting free the anterior face of the prostate and getting down to the point where I was about to cut into the bladder, I found it to be very easy to separate the prostate from the bladder wall. It seemed a proper step to separate the prostate totally from the base of the bladder, leaving only a small hole where crossing the urethra. In so doing, if one is certain the bladder wall is not involved, it is just a little more conservative than opening the bladder base and removing a large segment.

I would like to ask Dr. Smith if he has not obtained better results in the older men than in the younger, as we know that the older the patient the lower the degree of malignancy.

I would like to ask another question. Last July we had a patient with a single nodule in the upper right portion of the prostate, and it was highly suggestive of being malignant. We contemplated a total prostatectomy. This patient had suffered for years from hay fever, taking inoculations for it each August, and therefore wanted to postpone operation until the fall. In order to cover the interval with some degree of therapy, he was referred for deep x-ray treatment. I saw him again in September, and his prostate had changed. The nodule was diffuse, no longer sharply limited; there was what one might call extension to the side, above, and below—no longer the hard solitary nodule. Had this therapy stimulated its growth, or are we dealing now with a reaction of improvement? I would like Dr. Smith's opinion on the value of roentgen therapy.

In closing, I cannot help complimenting Dr. Smith. He unquestionably has the second largest series of these cases in the country. His surgical results are brilliant, and he has been highly critical of them. I would like to see Philadelphia urologists be more radical, and I am sure all can learn the technic. It is simply the dread of doing so much destructive surgery that holds us back. I'd strongly advocate that everyone see the operation done, because that, more than anything else, will help. Dr. Smith quietly talks of the operation taking an hour and a half. This is true, and it calls for careful, painstaking, and competent surgery.

Dr. Smith: I do not know why we see more of these patients in Boston except that all of the interns and residents are keen to see this operation done, and by examining every outpatient with that idea in mind, they pick up quite a number of early cases. We have had several patients with no urinary symptoms who turned out to have carcinoma. The answer lies in routine rectal examination of every male patient, at least from age 45 on, with the idea of detecting suspicious induration.

One of the speakers referred to the cures in this series of patients, but I must say that I never feel sure they are cured. When spinal metastases develop as late as 9 years after operation, it gives one pause; but if a man is given 9 or 10 years of comfort, that perhaps is all that we can hope for. Some patients of Dr. Young's have lived at least 15 or 20 years, and they obviously are cured.

One physiologic function that is not the same after operation as it was before is the sexual ability. That is absolutely wiped out. There is not the slightest trace of potency after the total removal of the prostate.

Dr. John Cunningham has removed the prostate by the suprapubic method, but I think perineal removal is much more intelligent. In some patients I have separated the prostate from the bladder neck; this makes the operation a little easier. You feel that the internal as well as the external sphincter is preserved and you think the patient will have a better chance of retaining control. There is no objection to it if the carcinoma is at an early stage and if the bladder neck is not invaded.

I cannot say whether the recurrences have been any more rapid and extensive in the young men than in the old. It is a fact that in older patients carcinoma tends to grow more slowly. For that reason I feel that transurethral resection in these old patients probably gives a better chance than it would in younger patients.

I have seen a good deal of reaction following x-ray treatment; it obscures the true situation. However, we have had some very remarkable results from it. One patient in whom I did a transurethral resection 3 or 4 years ago has had 2 series of x-ray therapy. The last time I saw him a year ago I would never have suspected his prostate of being malignant. At that time he had a paraplegia, but he is still alive. It looks as if the local process has been very well controlled. A few prostates respond to irradiation, but not a large enough percentage to make it something we want to count on.

Dr. Herman: What change in technic have you attempted to improve your physiologic result?

Dr. Smith: Simply more careful dissection, particularly being sure that the sutures do not go through the posterior layer of the triangular ligament.

Dr. Herman: Dr. Young did that on a patient of mine some time ago. He pushed the lateral fascia forward. The total incontinence was minimized, but the patient died. I think that the nerves do not run in the fascia sheet, but in the deep perineal underspace.

Dr. Smith: I never could see the basis on which Young makes the statement that the nerves descend anteriorly to the prostate.

THE SULFATHIAZOLE INCIDENT

Everyone who has even most casually scanned the pages of the pharmaceutical press within recent months is well aware of the facts of this case and yet there are certain aspects of the affair that are not appreciated nor even considered.

Intelligent comment has drawn a sharp line of distinction between this error and the one which is credited with bringing about the new Food and Drug Act. In the first place this mistake is not unlike similar ones made every day in all fields of endeavor. It was apparently one of those occasional mechanical errors made by everyone at some time or another. If, instead of phenobarbital, the foreign substance had been any *harmless* chemical, *what a difference it would have made*, and yet strictly speaking the error would have been just as great. Of course, control methods might be expected to uncover this oversight, and yet the very lack of uniformity within the tablets of a single batch could, by a most unfortunate coincidence, permit the situation to escape detection. A control procedure cannot assay every tablet made, but only a *representative* sample, and where a batch varies widely, it is possible that a *perfect* sample might have been selected.

The pharmaceutical profession is indeed unique among those engaged in forwarding public health. Its errors continue to live, welcoming all persons bent on detecting them. Because of these things some persons are led to believe that our errors are legion. Actually, if all the facts were available, we would wager that by this very token our mistakes are far less in number than those committed in other health fields wherein detection is not easily possible.

It should be understood that we do not condone errors —we dislike them and fear them more than anything else. Accuracy has always been a by-word in pharmacy. We teach it, we preach it, and we try to make it the pattern for all our procedures. Yet we know, and all fair-minded persons admit, that since pharmacists are but human, an occasional mistake will occur.

The proposal that further governmental regulations are needed to prevent a recurrence of such incidents is like proposing a law forbidding all people to touch hot objects. Pharmacy instinctively recognizes the need for accuracy, and events which so vividly call attention to an error do harm not to one company alone but to the entire industry. As has been very aptly stated, "The company making such an error will probably be the most exacting in the entire industry for years to come!"

No, it is not regulations that are needed; it is simply an unending and tireless pursuit of the control methods already implemented by all responsible companies—tedious and careful analyses, an elaborate control procedure, and close supervision by technically trained personnel over all workers in production departments.

We cannot hope to achieve perfection, but by striving toward that goal we shall at least bring our mistakes to a minimum. Nowhere is the saying "Eternal vigilance is the price of liberty" more true than in pharmacy.—*American Journal of Pharmacy.*

NOISE DRIVES US CRAZY

The Causes of Echeoses

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THE modern machine age has introduced a very serious, relatively new element into our lives. This element is noise. People who must live in cities seldom have a quiet place in which to work during the day, or to rest at night. These noises bombard the nervous system and tend to increase nervous fatigue.

The multiple and insidious ill effects of noise constitute an inadequately recognized influence on the lives of the many millions of persons throughout this country. In noisy industrial employments and clanging traffic it is not unusual to find many individuals with some degree of nerve impairment. Noise deafness is perhaps the most serious and tangible of the ill effects of noise, but there are, in addition, many other forms of echeoses made evident by loss of sleep, insomnia, excessive fatigue, emotional disturbances, and neuroses.

It has been shown that even the child before birth is affected by noise, and because of lack of needed rest may develop a nervous temperament. Experiments that have been carried out would indicate that if a mother is carrying a child within her, and is subjected to loud noises, the unborn child may move as if disturbed by the noise. Consequently, just as noise may affect the individual in the outside world, so the infant may show a similar effect.

Now that the nations across the sea are blasting each other out of existence, physiologists are naturally trying to discover just how much the ear and the nervous system can stand when an explosion blows down a block of buildings or leaves a 50-foot crater in the street. These blasts are instantaneous, and scream bombs intense, but there are also sounds that are not so appalling, which last for long periods and which also affect the ear. After a flight of an hour the pilot of a high-powered airplane is unable to hear high notes. He recovers his sensitivity, but if he flies for long periods without guarding his ears, his partial deafness may become permanent.

It was found that white mice that were placed in a factory where steel bars were hammered into scythes gave some illuminating results. One group of 10 mice was placed in a cage in contact with the floor, while another group was placed in a cage suspended from the ceiling by means of a spring. The two groups of mice were exposed to the same sound vibrations for 8 hours each day. In 20 days an examination of the mice from the cage on the floor showed destructive changes in the nerve cells connected with the ears. In 3 months the destruction was observed to have extended even further, while in 8 months the nerve cells and nerve fibers having to do with hearing had disappeared. At the same intervals, mice from the suspended cage were observed to have suffered no changes in their auditory apparatus. Then 6 guinea pigs were subjected to the continuous ringing of an electric bell suspended in their cage. Examinations at 5, 10, 20, 30, 40, and 60 days showed no damage to the auditory apparatus, but when the vibrations were transmitted through the tin floor of the cage, the animals became emaciated rapidly and 2 died after 14 days, and the others were found to show characteristic degeneration in the ears.

Experiments have been carried out in the war zones of Europe which indicate without a doubt that some of the so-called "shell shock" victims of the last war may have been the result of the devastating noise caused by bombing and shell fire. It has been noted that following a sudden severe bombardment the birds in the locality were all killed or stunned. In fact, according to the reports, the sea gulls in the British Channel have through experience learned of the harmful effects of high explosions, and consequently on the approach of enemy bombers they retreat to the hinterland for safety.

Actually, rupture of the ear apparatus not infrequently results, but also microscopic examinations have been made of animal as well as human victims of these bombings which show that, although there may be no evident external injury inflicted, there has been severe hemorrhage in the nervous tissues. This may cause permanent or temporary impairment, but no doubt has an effect on the reactions of the individual even if recovery does take place.

Seventy-five soldiers who handled and fired anti-aircraft guns were examined before firing was begun and re-examined one week after completion of the firing tests, which occupied a period of about two months. The long-continued and often repeated congestion of the ears resulting from the gunfire had a gradual diminishing effect on the acuteness of hearing by causing a chronic inflammation and loss in elasticity of the eardrums, with fibrous adhesions.

Noisy work performed in a confined space is more harmful to the ears than if done in the open air. Hammering inside a boiler or firing in an enclosed rifle range is especially dangerous since resonance, reflection, and reverberation accentuate the noise. On this account, work in much used vehicular or railway tunnels or subways is conducive to loss of hearing.

Policemen and taxi drivers are very often affected with deafness because of their continuous work in noisy traffic. It was reported that the opening of a new street carrying heavy traffic through a certain formerly quiet suburb caused the number of illnesses in that community to increase definitely.

Very loud, sudden noises, explosions, or excessive pressure changes are dangerous, particularly to the eardrums or the bony structure of the middle ear. In a trade such as drop-forging, where large pressure changes occur, it is found that many workmen acquire a thickening of the eardrum which prevents the usual air-borne sounds from passing readily to the inner ear. So regularly are drop-forge operators partially deaf that this impairment may be regarded as their proof of experience, and unless an applicant's hearing is damaged, in some of these factories he will not be employed.

It has been observed that dizziness sometimes is a result of exposure to excessive noise or vibration. Sounds that are of such pitch or intensity as to cause a tingling sensation or pain in the ear will probably cause permanent damage if exposure is continued over a long period.

High-pitched tones appear to be more dangerous than tones of low pitch. The din in boiler works is considered by some investigators to be more injurious than the roaring in cotton spinning mills.

Weavers using soundproof earmuffs in alternate weeks over a period of 26 weeks had an increased output of about 1 to 3 per cent when the defenders were worn. In terms of personal efficiency, there was an increase of about 7.5 per cent when working in subdued noise. This experiment led to the conclusion that, even after years of work in a noisy environment, workers do not become completely adapted or accustomed to noise but have to go through the process of adaptation daily.

Tests carried out on children and adults for their efficiency in addition and in marking out certain syllables in a confused jumble of 1600 letters, under the influence of various types of noise and music, showed that speed rather than accuracy was reduced. Soft recorded music appeared to have a more distracting effect on the subjects than did ordinary low level noise. However, if the test period was long enough to produce fatigue, the subjects apparently obtained some relief from music, whereas noise enhanced the fatigue with consequent adverse effect on efficiency.

In a factory where experienced workers assembled temperature regulators, 60 imperfections were found in a group of 80 regulators. The assembly room was next to a boiler shop. When this work was performed in a quiet place, 110 units were assembled in the same time previously required for 80 units and only 7 imperfections were found. In a packing room equipped with a noisy ventilating fan, the output was increased 12 per cent when the fan was turned off, in spite of the poorer ventilation which existed during that period.

In a business office, data were gathered before and after the offices were quieted. The noise level was reduced 14.5 per cent and the average efficiency of the office workers was increased 8.8 per cent. Errors of typists were reduced 29 per cent, while those of machine operators were reduced 52 per cent. Employee turnover decreased 47 per cent and absenteeism dropped 37.5 per cent. In another study a 12 per cent increase in the output of office workers followed a 50 per cent reduction in the noise. A 42 per cent reduction in errors in the telephone room of a telegraph company, with a 3 per cent drop in cost, was effected by a 50 per cent reduction in the noise.

A metabolism experiment was carried out at one of the universities, and it was found that 19 per cent less energy was consumed by typists after the noise was reduced in the experimental room 50 per cent by the addition of sound-absorbing wall panels. Letters were typed 4.3 per cent faster during the "quieted phase" of the experiment. Accuracy in immediate memory for nonsense syllables was increased 15 per cent, and delayed memory increased 8 per cent by reducing the noise 50 per cent.

A sharp loud noise produced notable irregular disturbance and a rise in the pressure within the skull to 4 times normal. A second noise caused another rise. These sudden noises also caused increased pulse rates, increased blood pressure, and irregularities in heart rhythm. Another experiment showed that the noise of a firecracker produced an increase in the systolic blood pressure of 20 mm. in 20 seconds.

Noise may seriously affect the normal digestive functions and help to cause so-called nervous indigestion. It has been shown that a loud noise inhibits the normal peristaltic activity of the stomach, and decreases the number of stomach contractions per minute by 37 per cent. A loud noise cuts down the secretion of saliva by about 44 per cent and reduces the flow of gastric juices.

People have been known to go without food for days without serious injury, but the loss of sleep, for even 36 to 48 hours, is often attended with serious mental and physical symptoms. It is not surprising that victims who are tortured in "the third degree" by the prevention of sleep in our police stations "crack" under the strain and confess to something for which they are not guilty. A person can live nearly as long without water and 5 or 6 times as long without food, as without sleep. Yet, millions of persons attempt to get needed sleep when their ears and nervous system are continually bombarded by the day and night noises of our cities.

In our modern way of living it is almost impossible to make up for overfatigue by rest after some event; but if the person is well rested before exposure to noise, he will not show fatigue so quickly nor run so great danger of nervousness. For this reason long hours of sleep are necessary for soldiers in combat, traffic officers, workers in noisy industries, and civilians under bombardment. For the boy or girl, man or woman, who is planning to stay up late at a party, rally, or unsymphonious modern dance, a short nap the afternoon before is a good preparation.

More young people break down from lack of relaxing sleep than from any other indiscretion, but oftentimes they are not sensible enough to plan their time so that they can give their bodies the necessary rest. The problem is not one for young people alone, however. The entire trend of the times is for people to keep themselves constantly busy, thus using up a great deal of physical energy, and then to stay up late at night to continue stimulating their nervous systems with radio or jazz bands. The noise of the environment makes it impossible wholly to recuperate from fatigue or to build up resistance against fatigue.

Very little effort is being made to curb the noises to which people submit themselves during their recreation. The modern tendency seems to be to seek excitement and exotic music, not rest and soothing melody, in recreation. Noise, speed, and color are the vogue, and they all stimulate the senses and give no rest.

An overfatigued person may show lack of spirit and energy, but, at other times, the reverse may be true. A muscle or sense organ stimulated by overwrought nerves may become tense and cause one to feel more alert and active than usual; thus overactivity and apparent vivacity, as well as lack of vigor, may be signs of overfatigue, which may lead to the "crack-up."

As has been pointed out, noise may lead to deafness, but of all the hazards, the effect upon the nervous system is the most serious. The nervous system controls the higher faculties of an individual—his ability to work, his mental capacities, and even his expressions of personality. Thus, anything which injures the nervous system is very dangerous to the welfare of the individual and to society in general. Noise lowers all of our faculties. It slackens and dulls our mental processes. It clouds judgment and reduces the precision of our actions. It decreases general efficiency and drags personality to a lower level. It makes us irritable, pessimistic, and grumpy. We become unpleasant people to live with when harassed by noise, and do not enjoy living with ourselves.

A carefully taken history more valuable than skin testing. See page 1482.

Problems in the Practice of Pathology

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THE chairman of your section has not been entirely inactive during the past year. In fact, the secretary of our State Society has intimated that our section was one of the most active in our society. The problems which have confronted us, however, have rarely been solved, but we have undertaken to study some of the aspects of these problems and, in time, their solution may be accomplished. They are of such magnitude that I have prepared a short paper, which I propose to give you at this time, and which I trust future chairmen of our section will find convenient to discuss at our annual meeting.

First, I wish to call attention to the president's address at the June meeting of the American Society of Clinical Pathologists. After a splendid review of the changing trends in the specialty during the past decade, *he implored the members of our section to improve their technic in physical diagnosis as well as the various aspects of clinical diagnosis by laboratory methods so that the clinical pathologist might be considered as a diagnostic specialist rather than a mere director of laboratories.* These things he stressed largely due to the fact that the field of laboratory medicine for the physician has narrowed down to gross and microscopic pathology, bacteriology, and possibly hematology, such narrowing being due largely to the great inroads into our specialty by state and city health laboratories, technicians, chemists, and sundry other organized and unorganized groups.

To many of us who have largely kept our eyes glued to a microscope, some of these statements seemed somewhat revolutionary. To others, they were only a reiteration of their own activities, since many pathologists today have skilled themselves in diagnostic procedures of all types and are considered as diagnostic specialists by all their associate practitioners of medicine.

Whether this is a good or a bad trend is not for me or probably any one of us to say, but it has resulted in a considerable change in the practice of our specialty, which I wish to take up in more detail a little later. However, let us stop for a moment and consider why these changes have come about.

First, consider the fact that the use of the clinical laboratory has grown in recent years by leaps and bounds. Few physicians today are willing to make diagnoses unless confirmed by one or more laboratory tests.

Second, very few physicians are entering the field of laboratory medicine. There are many reasons for this, which time will not permit me to discuss.

Third, the requirements for medical technologists have been raised to a fairly high standard so that routine tests can usually be competently performed without supervision.

Fourth, city health department functions have increased appreciably and the facilities of state health laboratories have been extended to all physicians with little regard for the ability of their patients to pay. This has become possible largely through grants-in-aid from the federal government.

Fifth, during this time the clinical pathologist proudly points to the record of achievement of his laboratory—many new improvements, an increasing volume of work, and increasing revenue. Perhaps even he has been given increases in salary from time to time. He cares not whether a technician trained in his own laboratory opens up a laboratory next door and soon has a well-established practice, perhaps charging less for service rendered. He cares little if the state or city health department laboratory receives the referred work of his fellow physicians engaged in private practice. He has no time to worry about the economic or professional side of his own specialty except when it concerns him personally and immediately.

From these brief statements, we can readily see that the practice of laboratory medicine is undergoing far-reaching change. Following these changes as outlined, let us look about us for a moment. In what direction are we headed?

Chairman's address, read before the Section on Clinical Laboratory Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

In the first place, the number of hospitals approved for intern training (90 in Pennsylvania) determines largely the number of trained pathologists we have in the state. But, there are 300 other laboratories.

The fee schedules in operation in the 90 hospitals are considerably higher than in the other 300 or more laboratories and so-called laboratories in the state. The physicians are beginning to ask why must my patient pay $5.00 for a blood count in the hospital when he can get it for one-half that amount outside? Also, the equipment in the hospital laboratory may be comparatively meager; the technician and ofttimes the pathologist are grossly underpaid. What will happen when laboratory fees fall? Certainly the hospital does not feel called upon to make up a deficiency in laboratory expenses. I leave the result to your imagination.

Already technicians, chemists, and even former orderlies are in charge of their own private laboratories. There seem to be no requirement standards as to who may or who may not open up a laboratory. Will the present high standards of efficiency so essential to accuracy continue to prevail? It seems doubtful.

The State Health Department has recently issued an order stating that all cultures for typhoid to be official must be made in the State Health Department laboratory! Why? Simply because they cannot trust the reports of many of the private laboratories! In the serologic testing of laboratories by the State Health Department for purposes of Pennsylvania's premarital and prenatal laws, sera had to be submitted sometimes 6, 8, or 10 different times before approval was finally granted. Later on this afternoon, we shall hear how efficient the 173 pneumonia control stations were during the past year in the bacteriologic diagnosis of pneumonia. Is there any need to state the direction in which we are headed? The answer is all too apparent.

When one laboratory issues a false report, the prestige of every laboratory suffers. Gentlemen, the practice of clinical laboratory medicine is on the block. Are we going to buy it back or shall we let it go to the highest bidder? Shall we sit quietly by and wait until the State Health Department steps in to regulate completely our professional activity? Shall we appeal to practicing physicians to use only the hospital laboratories or shall we gracefully step out into some other specialty, leaving the problem of laboratory medicine unsolved?

These are possible lines of action which have been followed to date, and still the problem looms larger than ever. There is, however, one line of action which we can follow that should produce a certain amount of order out of the chaos which confronts us. Already a certain few states have passed laws regulating the practice of laboratory medicine. It seems only a question of time until we in Pennsylvania will be confronted with state regulation. If we act in time, we can possibly dictate at least a portion of such laws. The officials of our State Health Department are acutely aware of these problems and will gladly welcome our efforts toward their solution. We have, to date, enjoyed their wholehearted co-operation in all particulars.

At present, our State Medical Society officers advise against opening up the Medical Practice Act of Pennsylvania. A few years ago our State Board of Medical Education and Licensure attempted to straighten out the laboratory problem, but gave it up as a bad job.

Now we have certain patterns from other states to guide us and should be able to make progress in this direction. During the coming year we will attempt to formulate such regulations as may seem advisable. Please forward your comments. This is our problem and we expect to face it squarely, but the joint effort of every one of us is of paramount importance to its successful solution. Perhaps there is some other solution to our problem. Let us then await developments of 1941.

In the meantime, our section has succeeded in obtaining passage of a resolution through our State Medical Society requesting the formation of a state society laboratory committee for various purposes. Some of you may be requested to serve on this committee and at that time much good can be done to educate our fellow physicians in the various aspects of the problems growing out of their use of tax-supported "free" laboratories and their support of the incompetent laboratories mentioned. Such a concerted effort at education of physicians was emphasized by means of a resolution adopted by the A. M. A. House of Delegates in June, 1940. May we hope for better days ahead?

Idiopathic or essential hypertension as a diagnosis said to be a passing fancy. See page 1479.

Perforation in Cancer of the Colon

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ANY phase of the problem of carcinoma of the colon should be of paramount interest, inasmuch as many of these cancers metastasize late and are therefore definitely susceptible of cure by radical resection and should form a group in which the percentage of cure ought to be relatively high. Unfortunately, in the advanced stage of the disease, even without metastasis, certain *local* changes may complicate the procedure of radical resection and render it difficult or impossible; these are (1) direct extension of the carcinoma to adjacent structures or organs, and (2) perforation. Perforation in cancer of the colon is, therefore, evidence of advanced disease.

Though suppuration in association with carcinoma of the colon is well recognized, it would seem that insufficient emphasis has been laid upon the likelihood of perforation with colonic cancer, and there is a noticeable lack of reference to it in current medical literature.

As early as 1841 Velpeau reported an abscess in the left iliac fossa with a carcinoma of the sigmoid (Starr and Nason). In 1880 Heschl described perforation of the gut proximal to intestinal occlusion caused by cancer of the colon (Saeltzer and Rhoades). Similar cases of perforation were reported by Anschutz (1902) and Hartwell (1917). In 1904 Tuffier recorded a deep abdominal abscess as the first symptom of cancer of the large intestine. An intensive discussion of the subject was held by the Société de Chirurgie in Paris in 1910. Korte gave a fairly comprehensive report of 18 cases in 1913, and following him Goldschmidt reported 2 cases, and Finsterer, 3 cases. In 1922 Ashhurst described a pelvic abscess with carcinoma of the cecum, and Lerch, in 1933, referred to an abdominal wall abscess as the first symptom of colon cancer. Recently, Bargen and Cox (1932), and particularly Starr and Nason (1933) and Saeltzer and Rhoades (1935), have called attention to the association of perforation with cancer of the colon. Since then there have been reports by Desjardins (1936), and also by Doberaner (1939), of cases of carcinoma of the cecum and colon with peritonitis.

Therefore, having encountered 7 instances of perforation in carcinoma of the colon in the past 3 years, a brief review of them would seem timely:

Case Reports

CASE 1.—A male, aged 54, was admitted to the hospital on Apr. 5, 1938, complaining of constipation and right abdominal pain. For 3 weeks he had had pain in his right side after lifting a heavy weight. Six days before admission the pain was so severe he stopped work and went to bed. The pain felt "like air going through the bowel" and was intermittent—never severe. The constipation of 3 weeks' duration was relieved by cathartics. There was no melena and no diarrhea.

The abdomen was distended and tympanitic, peristalsis was excessive, and an indefinite mass was palpable in the right lower quadrant.

Hg.	*R.B.C.*	*W.B.C.*	*Polys.*
12 Gm.	5,500,000	13,000	66%

Wassermann: Negative.

Urine: Negative.

X-ray: Filling defect in cecum suggesting a neoplasm.

Diagnosis: Carcinoma of cecum causing partial intestinal obstruction.

Operation.—Apr. 8, 1938: Hard tumor size of orange in cecum. Adhesion of ileum over tumor. No metastases. Ileocolostomy done from a point 12 cm. proximal to adhesion of ileum to middle of transverse colon.

Postoperative Course: Uneventful recovery with slight superficial wound infection. On the twenty-first day after operation there was pain in the area of the incision with fever. Six days later there was a definite prominence in the lower right part of the abdomen with tenderness and superficial induration. By incision an abscess was evacuated lateral to the recent scar between the tumor in the ascending colon and abdominal wall, containing 50 c.c. of foul pus. Drainage was instituted and recovery was uneventful. The wound healed in 4 weeks.

The patient was discharged June 4, 1938, but was readmitted July 5, 1938, for a second-stage resection. He now had well-marked secondary anemia. There were 4,600,000 red blood cells and the hemoglobin was 9 grams. He was prepared for operation by transfusion and intravenous fluids.

Operation—July 11, 1938: Exploratory laparotomy. Resection was abandoned because of a rapid irregular pulse and auricular fibrillation 20 minutes after the operation was begun. An impending perforation over

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Read before the Section on Surgery of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

the cecal mass was found and covered by omentum. The area was drained. Convalescence was stormy. The patient was thoroughly digitalized and was given numerous transfusions. Finally, on Aug. 22, 1940, we did a radical resection of the side-tracked loop of ileum, cecum, and ascending colon with the tumor.

Recovery was uneventful. The patient was discharged Sept. 14, 1938, but died 13 months later with general carcinomatosis.

Summary: Carcinoma of ascending colon and cecum complicated by perforation and formation of a large pericolic abscess with recovery following three-stage procedure—ileocolostomy, drainage of abscess, and resection.

Case 2.—A woman, aged 60, was admitted to the hospital on Oct. 8, 1939, complaining of abdominal pain, vomiting, and constipation. For 6 months she had had sharp pain in the upper left part of the abdomen with constipation. She was never constipated before, but took salts to reduce her weight. Four weeks previously she had severe pain and vomiting for 5 hours. Ever since, there was almost constant and increasingly marked general abdominal pain. Bowel movement was obtained only by enema for the last 2 weeks with very little result. The stool was green and black at times, but there was never any melena. The patient vomited again 3 days ago, and passed flatus today.

The temperature was 101.6 F., pulse 90, and respiration 22.

The patient was a very obese woman with moist râles at the bases of the lungs. There was marked abdominal distention with tenderness in the upper left quadrant over a mass with a nodular rounded margin. extending beneath the left costal margin.

R.B.C.	*Hg.*	*W.B.C.*	*Polys.*
3,800,000	12 Gm.	11,000	51%

Urine: Negative.

Diagnosis: Carcinoma of splenic flexure with suppuration and obstruction.

Operation: Simple cecostomy without exploration.

Postoperative Course: Six days later there was left femoral phlebitis with small left pulmonary embolism. There was gradual improvement with an oxygen tent and neoprontosil. The cecostomy functioned well, but low-grade fever persisted.

Oct. 22, 1939 (14 days postoperatively): Marked increase in tenderness in upper left part of abdomen with marked superficial induration and edema and definite fluctuation. 150 c.c. of foul thin fecal material and pus evacuated by incision under local anesthesia. Steady improvement. X-ray showed splenic obstruction to barium enema. All defecation through cecostomy. Gradual recovery with slight persistent drainage from fecal fistula at point of drainage.

Nov. 24, 1939: Definite icterus with some epigastric pain. Gradual steady deepening of jaundice with slow cardiac decompensation. Patient died on Feb. 1, 1940.

Autopsy showed a huge carcinoma in splenic flexure of colon completely obstructing the gut, extending into the pancreas and over into the gastrohepatic omentum beneath right lobe of liver obstructing the common duct. Eight cm. distal to the neoplasm was an adhesion of the descending colon to the abdominal wall, in the center of which was a perforation from which a sinus extended through the abdominal wall. No distant metastases were found.

Summary: Advanced carcinoma of the splenic flexure in a 60-year-old obese woman with complete obstruction of the gut and a perforation of the colon *distal* to the lesion. Relieved by cecostomy and drainage of superficial abscess. Death subsequently from local extension of the disease.

Case 3.—A male, aged 61, was admitted to the hospital on Mar. 23, 1940, complaining of pain in the right flank. For 1½ years he had had intermittent epigastric pain with nausea and vomiting, coming on 1½ hours after meals with a loss of weight of 30 pounds. For the last 2 weeks he had steady aching pain in the right flank radiating to the epigastrium with anorexia. He had anemia for one year.

He was emaciated and pale. A low systolic blow was heard in the axilla and over the entire precordium. The heart was enlarged to the left and right. A palpable mass difficult to outline was located in the upper right part of the abdomen with some rigidity and tenderness.

R.B.C.	*Hg.*	*W.B.C.*	*Polys.*
4,600,000	9.5 Gm.	15,000	85%

Urine: Trace of albumin. Hyaline casts.

X-ray: Large filling defect in ascending colon. No evidence of obstruction.

Diagnosis: Carcinoma of ascending colon.

Operation—Mar. 27, 1940: Large mass in ascending colon, 15 cm. in diameter, causing no obstruction. Two-stage operation seemed preferable; ileocolostomy done between ileum 20 to 25 cm. proximal to cecum and the middle of the transverse colon.

Postoperative Course: Convalescence prolonged by hiccough and very marked auricular fibrillation. Apparently well recovered 11 days after operation, and wound well healed 2 weeks after operation, then pain, marked swelling, tenderness in the mass, afternoon fever, general malaise, and hiccough began with rapid increase in fever and pain. Four days later an abscess containing 10 to 15 c.c. of pus was evacuated through the right flank. Fibrillation and hiccough returned. Apparently there was definite cardiac decompensation, only temporarily improved by digitalization, but finally terminal decompensation with uremia. Patient died on July 10, 1940.

Summary: A 61-year-old man with advanced cardiovascular disease and a large carcinoma of the ascending colon developed an abscess lateral to the growth due to slow perforation of growth, relieved by ileocolostomy and drainage of abscess. Patient died of cardiorenal disease before second-stage operation could be completed.

Case 4.—A woman, aged 54, was admitted to the hospital on Aug. 1, 1939, complaining of severe generalized abdominal pain and vomiting. Five days before she had been seized with sudden severe acute abdominal pain beginning near the umbilicus and then becoming generalized. She vomited several times and seemed relieved until 6 hours before admission when the abdominal pain and vomiting recurred with constipation.

The abdomen was distended in its lower half with some voluntary rigidity and tenderness in the suprapubic area extending up the right half of the abdomen. A nodular mass was palpable in the lower right part of the abdomen and excessive peristalsis was heard over it.

The temperature was 100 F., and the pulse 100.

Diagnosis: Carcinoma of cecum and ascending colon or appendiceal abscess.

R.B.C.	*Hg.*	*W.B.C.*	*Polys.*
4,200,000	12 Gm.	15,000	75%

Urine: Negative.

X-ray: Showed a questionable lesion in cecum.

Barium enema given 12 hours after admission. Severe pain followed, with marked rigidity and right-sided tenderness. White blood cells now 32,000. Peritonitis from appendiceal abscess suspected. Immediate operation.

Operation: Right half of abdomen filled with adhesions of small intestine with pools of pus between them. Major exudate beneath transverse colon. Induration and thickening in mesentery of ascending colon, but no definite perforation of small or large intestine found. Appendix completely negative. Witzel enterostomy done above the involved area and drains placed beneath transverse colon.

Postoperative Course: With Wangensteen suction, intravenous fluids, transfusions, and prontosil (30 c.c.) given daily for 4 days; gradual recovery with fecal fistula from drainage tract. Enterostomy tube out on tenth day. Fecal fistula closed on twenty-fourth day. Discharged on forty-second postoperative day.

Six weeks later definite mass in right abdomen apparently in ascending colon about 6 to 7 cm. in diameter. Operation advised, but refused. Mass steadily increased in size to a huge prominence filling the abdomen. Patient died on Mar. 4, 1940.

Autopsy revealed a huge mass of neoplastic tissue extending from the stomach to the pelvis with the entire small intestinal tract incorporated in the mass with a lumen preserved in most areas. Probable source of tumor seemed to be the colon. Microscopic examination of the tumor showed it to be an adenocarcinoma.

Summary: Acute general peritonitis in a woman of 54 years due apparently to perforation of carcinoma of ascending colon, relieved by enterostomy and drainage, but patient died 7 months later of massive peritoneal extension, further operative treatment having been refused.

CASE 5.—A male, aged 75, was admitted to the hospital on Nov. 21, 1938, complaining of sharp epigastric pain. For one year he had had generalized abdominal pain with rumbling of gas, periods of diarrhea alternating with constipation, and anorexia. There was no melena. He lost 40 pounds in weight. He had an epigastric mass for 2 months, diagnosed cancer of the stomach. No treatment was advised. Twelve hours before admission a sharp epigastric pain developed which remained constant and persistent.

He was markedly emaciated and had a loud systolic blow heard over the entire precordium. His abdomen showed a large mass protruding from under the left costal margin with marked tenderness and rigidity over it. There were bilateral direct inguinal herniae.

R.B.C.	*Hg.*	*W.B.C.*	*Polys.*
2,400,000	5 Gm.	14,000	80%

Urine: Trace of albumin.

Diagnosis: Perforation in carcinoma of stomach or colon.

Operation (immediate): A large movable mass in the transverse colon to left of midline, 10 cm. in diameter, extended high up beneath the stomach and showed on its anterior surface a leaking of seropus, but no direct opening into lumen of gut—great quantity of markedly turbid peritoneal fluid—no plastic peritonitis. Perforation closed by suture and covered over by the omentum.

Postoperative Course: Febrile convalescence for 3 weeks. Repeated transfusions and high vitamin diet.

On Oct. 19, 1938, a cecostomy was done. Finally, with further transfusions and a high vitamin diet, which the patient took very poorly, there was sufficient improvement so that a laparotomy was undertaken on Jan. 4, 1939, to attempt resection of the tumor, but both pancreatic and duodenal involvement was found and the lesion was considered inoperable. There was no improvement. Patient died on Feb. 1, 1939.

Summary: A large, long-standing carcinoma of the transverse colon with slow leaking perforation in a very emaciated and anemic old man. Relieved by simple closure, but eventually found inoperable. Death 3 months later.

CASE 6.—A male, aged 76, was admitted to the hospital on Feb. 27, 1939, complaining of marked increasing distention of the abdomen with increasingly severe abdominal pain. He had had no bowel movement for 6 days. Eight hours before admission the pain was excruciating, requiring morphia for relief. He had had intermittent periods of constipation for one year and loss of weight. He seemed acutely ill, semicomatose, emaciated, with weak pulse, moderate auricular fibrillation, and cyanosis. The abdomen was hugely distended with board-like rigidity. Peristalsis was absent. There was tenderness over the entire right half of the abdomen.

The temperature was 100 F., the pulse 110, and the respiration 30.

R.B.C.	*Hg.*	*W.B.C.*	*Polys.*
4,700,000	14 Gm.	18,000	92%

Urine: Hyaline casts and albumin.

X-ray: Huge distention of large intestine with gas.

Diagnosis: Patient in extremis; general peritonitis secondary to perforation of cecum.

Subsequent Course: Conservative treatment instituted. Intravenous fluids, transfusion, Wangensteen gastric drainage. Patient died 36 hours after admission.

Autopsy revealed gas and feces in peritoneal cavity and marked general peritonitis. Ascending colon and cecum greatly dilated, thinned out, and gangrenous in several areas, one of which had perforated. Ring carcinoma at the rectosigmoid junction with marked constriction of the lumen of the gut.

Summary: Rupture of ascending colon secondary to overdistention from intestinal obstruction due to carcinoma of the rectosigmoid. General peritonitis and death within 48 hours of rupture. Admitted too late for surgery.

CASE 7.—A woman, aged 33, was admitted to the hospital on July 13, 1939, complaining of severe abdominal pain and constipation. For 3 weeks she had had intermittent dull abdominal pain unlocalized with sharp cramps and vomiting. There was no bowel movement for 2 days. The abdomen was greatly distended and the pain became fairly constant and more severe.

Examination disclosed a hugely distended abdomen extremely tender and rigid throughout, also tympanitic. No peristalsis was heard.

The temperature was 100 F., the pulse 96, and the respiration 20.

W.B.C.	*R.B.C.*	*Hg.*	*Polys.*
14,000	4,500,000	12 Gm.	80%

Wassermann: Negative.

Urine: Trace of albumin.

X-ray: Large intestine hugely distended with gas. Barium enema showed obstruction at splenic flexure.

Diagnosis: Carcinoma of splenic flexure.

Subsequent Course: Patient was greatly relieved by Wangensteen drainage and enemas, which were quite effective. She expelled flatus freely. Marked low abdominal tenderness persisted with attacks of acute unlocalized abdominal pain.

Therefore, on July 15, 1939, a cecostomy was done. The cecum was found adherent to the parietal peritoneum and there was a large collection of gas and thick turbid fluid in the pelvis, partly extraperitoneal. The pelvis was drained and a cecostomy was done. There was very free drainage from the wound.

Postoperative Course: Ninety grams of sulfanilamide was given daily. The abdominal pain and nausea persisted. Two days after operation there was sudden, severe, lower right quadrant pain with fecal fluid pouring out of the wound. Collapse was rapid and death occurred in 3 hours. There was no autopsy.

Summary: Obstruction of large intestine at the splenic flexure, partial at first, then becoming complete with slow perforation of cecum secondary to overdistention, and finally rupture of cecum with rapid death.

Recapitulation

Seven cases have been described in which perforation occurred with carcinoma of the colon:

	Cases
Rupture or diastasic perforation of the cecum, due to overdistention of the gut, proximal to an obstructive cancer	2
Acute perforation of the growth with peritonitis	2
Slow perforation with formation of local abscess	3
Total	7

	Cases
In association with cancer of ascending colon and cecum	3
With cancer of splenic flexure	2
With cancer of transverse colon	1
With cancer of sigmoid	1
Total	7

All perforations developed in or proximal to the growth except one, i. e., a perforation in the descending colon distal to a cancer of the splenic flexure. This is not easy to explain. It seems likely that a small diverticulum suppurated and became adherent to the abdominal wall and, due to overdistention from an enema, ruptured into the superficial tissue.

Comment

Korte has reported 18 cases (7 per cent) of perforation with abscess in 254 cancers of the colon. Bargen and Cox cite 141 perforations in 1502 cases of carcinoma of the colon (9.3 per cent). Starr and Nason have recorded 7 cases in 51 cancers of the colon (14 per cent). We have observed 5 cases of perforation and 2 of rupture in 30 cases (23.3 per cent). It is obvious that the higher the incidence of late cancer in a series, the greater the percentage of perforation found.

Pathology

Perforation usually results from either necrosis and ulceration through the tumor itself or from ulceration proximal to an obstructing lesion according to Starr and Nason. However, one of our cases perforated distal to the growth. Neoplasms tend to outgrow their blood supply, leading to necrosis, progressive penetration of infection, and perforation. This most commonly develops in a fungating tumor of the right colon with but little obstruction. Ulceration of the bowel occurs quite frequently, however, proximal to *stenosing* tumors, and with overdistention these ulcers may perforate.

Diastasis or blowout perforation has been particularly described by Hartwell and Saeltzer and Rhoades. This type of perforation is a rupture of the cecum due to overdistention from intestinal obstruction caused by a distal colonic neoplasm. The causes for this blowout occurring in the cecum have been stated by Saeltzer and Rhoades to be:

1. The wall of the cecum is thinner than elsewhere in the colon.
2. A partial obstruction of the colon which has existed for some time before the acute obstruction may weaken the cecal wall.
3. The diameter of the cecum is greater than other parts of the colon and is capable of greater distention with a closed or competent ileocecal valve.
4. Overdistention with obstruction of the colon.
5. A possible sphincter at the hepatic flexure.

Certainly, overdistention with a competent ileocecal valve preventing reflux into the small intestine seems to be the greatest factor.

Symptomatology

The typical symptoms of perforation are found only with rupture or rapid perforation into the general peritoneal cavity. These are sudden, severe abdominal pain with vomiting and abdominal board-like rigidity, tenderness, and at times rapid collapse. In the neglected case a local abscess may be the first evidence of disease (Tuffier). With a definite abscess there will be fever, a tender mass or rapid increase in size of a former mass, or evidence of inflammation in the abdominal wall. Very rarely will fluctuation be discernible.

Diagnosis

Without symptoms of acute perforation the diagnosis is often difficult. X-ray observations are important in demonstrating the presence of obstruction and the location of the tumor. A simple radiograph of the abdomen (flat plate) will reveal in the presence of obstruction the outline of the large intestine by its gaseous overdistention. At the same time, when no gas is seen in the small intestine, a competent ileocecal valve may be suspected. The position of the tumor and location of the obstruction may be determined by a barium enema. Slow penetration and abscess formation may be suspected with increasing fever and leukocyte count and local tenderness about a tumor. Differentiation from diverticulitis with perforation may be impossible without abdominal exploration.

Treatment

The first intensive discussion of perforation with abscess in cancer of the colon took place in 1910 before the Société de Chirurgie in Paris (Starr and Nason). The consensus of opinion was that the prognosis was hopeless and treatment only palliative. However, in 1913 Korte reported 7 cases of incision and drainage of the abscess with subsequent spontaneous closure of the sinuses, followed by radical resection with 4 recoveries. He believed that a large, apparently inoperable lesion may become easily resectable after preliminary drainage. More recently, Starr and Nason likewise agree that the above two-stage procedure should be followed, but suggest that the abscess should be drained extraperitoneally, if possible, with or without a colostomy proximal to the lesion. In acute perforation or rupture, *immediate* operation is imperative, and the opening, if recognizable, should be closed by direct intestinal suture or by suturing the omentum over it and drainage instituted. Simple drainage with enterostomy as in Case 4 may alone suffice. Later resection may be undertaken. With prompt operation in very early perforation, exteriorization and obstructive resection may be feasible, particularly with the growth in the sigmoid or transverse colon. This might have been the procedure of choice in Case 5 if the growth had been less extensive.

Prognosis

Perforation in cancer of the colon indicates a late stage of the disease, and the prognosis is grave. The two-stage procedure cannot always be done because of widespread local extension or death from cardiovascular disease during treatment. Operative recovery from palliative measures such as simple drainage of abscess can usually be expected. Of Korte's 18 cases, 7 were resectable and 4 survived radical operation. Starr and Nason report 7 cases, of which 3 were resectable and 2 survived—one 17 years and one 6 months; 2 of the remaining 4 failed to survive palliative procedures. Of 5 cases of diastasic perforation or rupture of the cecum reported by Saeltzer and Rhoades, 4 patients died and one recovered following operation. Resection was possible in but one of our 7 cases. He survived a three-stage operation, but died one year later. In 5 of the remaining 6 cases only palliative measures could be instituted. Two of the patients failed to survive, and 3 died of extension of the disease, all within 6 or 7 months. One case was in extremis; no operation was undertaken.

Prophylaxis

Treatment of colonic cancer with perforation is in reality making the best of a bad bargain. It is an attempt to save the situation in the late stages of the disease when manifestly the opportunities for success are limited. Obstruction of the colon with a competent ileocecal valve brooks no delay in treatment. Conservative measures will not suffice. Rupture of the cecum may be avoided by a prompt cecostomy or colostomy proximal to the growth. If cancer of the colon is recognized early and prompt treatment instituted, these complications should not occur and this desperate problem for the surgeon would be prevented. One-stage procedures whenever possible will also tend to prevent the possibility of the development of perforation between stages of multiple procedures as in 2 of our cases.

The early recognition of cancer of the colon would not be difficult if symptoms referable to the early stages were kept in mind. Many of these are known. It is merely that we must be constantly conscious of their significance. It is well recognized that a change of bowel habit in a person over 40 may indicate cancer of the colon, but absence of this should not lull us into a sense of security. Dr. Frank Lahey has recently published statistics, analysis of which is exceedingly illuminating. In the study of 100 proven cases of right colon cancer and 100 of left colon cancer, it was found that not only 81 per cent showed some altered bowel function but that 82 per cent had abdominal cramps or pain. The cases with involvement of the left colon showed abnormal stools in 47 per cent, but those with involvement of the right colon in only 9 per cent. In other words, right colon cancer will rarely have a history of abnormal bowel movements, and left colon cancer in less than 50 per cent, but pain—crampy-pain, gas pain, the pain of partial obstruction—may be *first evidence* of carcinoma in the colon; not only change in bowel habit but more especially abdominal pain in any person who has not been subject to bowel abnormality must suggest the possibility of cancer. A change in stools or in the character of stools is frequently not found in cancer of the colon. It is more commonly associated with cancer of the rectum. The nearer the rectum, the more likely will there be bowel abnormality. The indigestions and bowel abnormalities of later years must not first be considered as food poisonings, functional diarrhea, or simple gas pain, but first as *cancer,* until they are proven otherwise by thorough study.

Summary

Perforation in cancer of the colon is evidence of a late stage of the disease; it is a complication that may make the immediate as well as the eventual prognosis grave. It may be due to rupture of the large intestine from overdistention secondary to a distal obstructive cancer and a competent ileocecal valve, or to a direct perforation about the growth itself. The perforation may be rapid with general peritonitis, but usually is slow with the formation of a local abscess. The treatment in rupture of the cecum is immediate operation, closure of the perforation and cecostomy, or enterostomy proximal to the rupture. Unless recognized promptly, the mortality will be high and the operation useless. In perforation with acute general peritonitis, closure of the perforation with drainage or, when the point of perforation cannot be determined, simple drainage with enterostomy may suffice; without general peritonitis, obstructive resection (Lahey type) may prove satisfactory. With slow perforation and abscess formation, the two-stage procedure of drainage of abscess followed by radical resection is best. However, many cases are so advanced that simple palliative drainage with or without proximal enterostomy or cecostomy is alone possible.

Conclusion

Perforation may not infrequently occur in the advanced stage of cancer of the colon either from suppuration about the tumor or from overdistention of the gut when the neoplasm closes off and obstructs the intestinal lumen. It represents a stage of the disease that is difficult to cure. Diagnosis of cancer of the colon in its early stages, with appropriate prompt treatment, will eliminate the disease before extensive suppuration can occur and will avoid the need to cope with this serious complication. Prompt cecostomy in obstruction due to carcinoma will prevent rupture from overdistention and the high mortality attending this accident.

ABSTRACT OF DISCUSSION

Damon B. Pfeiffer (Philadelphia): Any complication which occurs as often as 10 per cent of cases is important, and yet we hear very little about the possibility of perforation in carcinoma of the colon and we think too little about what to do when we meet it. Dr. Estes' experience shows that these perforations may occur at various points, but most often at the site of the lesion itself. They occur, moreover, in the acute, subacute, and chronic forms. The chronic form is that in which there is perforation into some adjoining adherent structure. They occur also in subacute form into preformed adhesions, or perhaps as a slow leak which is localized, resulting in a pericolic abscess; finally, as free perforations, which are not so common.

It is also important to remember that an ulcer of an overdistended bowel above the perforation may form and perforate into the peritoneal cavity. These are usually at the antimesenteric border of the bowel where the blood supply is poorest.

Many years ago I saw such a case of perforation take place. I was called at night to operate upon a patient with obstruction. She was a fat woman, very toxic, and I did not entertain much hope of saving her. She took ether badly. I made a right rectus incision, and as soon as the peritoneum was opened, the cecum began to bulge into the wound. There was a green spot on it which looked like it would pop, and it did pop.

I recall also an elderly woman who had a carcinoma of the splenic flexure. There was no obstruction, and I thought it was an ideal case for the Mikulicz operation. When I raised the bowel from the posterior wall, I found an abscess containing about an ounce of pus. There had been a posterior perforation. She died of uncontrollable phagedenic wound infection a few weeks later.

In the past 2 years I have had 2 woman patients in their early twenties with subacute perforation in cancer of the descending colon. The first case simulated perinephritic abscess. The patient was sent home after drainage. When she was brought back with a recurrence of the abscess, I noticed the appearance of the tissue and by biopsy it was demonstrated to be a carcinoma of the bowel. In other words, she had a perforated carcinoma long before obstruction had occurred. In the second case I operated after a diagnosis of carcinoma of the bowel had been made. I drained the abscess and made a colostomy. The growth extended up under the peritoneum and into the liver as well. This patient died about 3 months later.

In another case of carcinoma of the sigmoid, perforation took place between the first and second stages Nevertheless, I did a second-stage operation and the patient is now well, over 5 years. This is the only case that I can recall in which I have had a permanent recovery following a perforation in carcinoma. It is important to note the change in symptomatology when these cases perforate. If they do not perforate freely, the inflammatory signs and symptoms mask the symptomatology and one may not think of carcinoma. That is true also of the x-ray appearance. The presence of the inflammatory process may give the appearance of a segmental colitis.

An important point in the exploration is to make sure first that one is not dealing with subacute perforation. The way to handle these cases, as pointed out, is by a stage procedure; namely, a preliminary colostomy with drainage of the abscess first. Later, the operation can be completed with a clean defunctionated bowel, with tissues from which the inflammation has largely disappeared, and with some chance of making the excision sufficiently extensive to give the patient a chance of cure.

THE MEDICAL CRIER

Memories of J. L. F. in the Mahoning County (Ohio) Medical Society Bulletin

Now, in the ninth year of the reign of the mighty Caliph, it came to pass that a great concourse of savants and wise men learned in the healing art assembled in the city founded by Moses on the shores of an inland sea. And there were among them many who traveled from the far corners of the land to make pilgrimage and worship at the Shrine of Aesculapius. So that the inns were filled to bursting and there were those who had no place to sleep but spent the nights smoking fragrant leaves of incense and discoursing one with another on the teachings of the disciples. And others shared their beds with those who had the secret password, for there was among them a bond of priesthood so they were as brothers.

And one among them, young and fair of face with beard half grown, came from a city of great smoke where the sun was dim by day and great fires lit the sky at night. For he did thirst for knowledge and his feet were weary from traveling in a rut. And he did marvel greatly, for lo! the hall wherein they met would hold the hosts of Pharaoh, yet it scarce contained the multitude. And his spirit quailed and he approached timidly to one who held a great book to number the throng and spoke to him thus, "Master, I come from the East and have not rich gifts, nor great price to pay." Then answered he who held the book and said, "Son, but show me your parchment whereon is written the magic words and all shall be opened to you without cost." And he did pin upon the young man's threadbare garment ribbons and ornaments of gold so that he could pass therein, even unto the upper room.

Then rejoiced the young man greatly, and he did go in with widely opened eyes to view the marvels. And behold! he saw there great machines which showed the inner parts of man. And some there were who bound up broken limbs to heal in shells like stone. And some discoursed upon men's backs weakened by bearing burdens, and showed how they could heal as strong as Atlas. Some there were who made men sleep so that they felt no pain when priests drove out the devils with sharp knives. Then came he to a darkened chamber lit only at a distant part and he did grope his way to find a place among the silent acolytes. And there he saw upon the distant wall the images of priests and priestesses who ministered unto a woman in travail. And they did anoint her with oil of sesame and balsams, but no issue came forth. And they did cover her with purified garments and robes and she strove mightily to no avail. And no one who was unclean could touch her. Then came one who placed a shining crown upon her face and she did sleep. And the high priest strove with her and grasped the child and turned it and did draw it forth. And smote the child so it did cry out and the woman woke and heard it and rejoiced.

Now when the time came to depart, the young man journeyed with great haste to the city of smoke, for he was filled with the wonders he had seen. And at the city's gates he met one of the elders and cried out to him saying, "I bear tidings of great joy, for in the city of Moses I have seen new ways to heal men's bodies! I met there many brother disciples of Aesculapius and they are doing wondrous things!" Now the elder was learned in the law and in the government of peoples and he answered thus, "Give ear my son and put a bridle on thy tongue. Know you not that you have been associating with thieves and brigands? Only yesterday the word came of their punishment for combining together to restrain the trade and commerce of the land. Go now, and mend thy ways!"

Then was the young man humbled and departed softly to his home and when there came those who said, "What saw you in the great city of spires and minarets beside the shining sea?" he cast his eyes upon the ground and said—"I dreamed a dream."—*J. A. M. A.*, June 28, 1941.

INTRAVENOUS ANESTHESIA

While there are various reactions on the part of different surgeons to this type of anesthesia, some being enthusiastic about it while others are not, we believe that there is unquestionably much to be said in its favor. The two agents most commonly used are evipal sodium and pentothal sodium. Both are barbiturates and their action is equally rapid. Since they are nonvolatile substances, they are destroyed in the body. This process takes place so quickly that there is no question of cumulative effects. It is most suitable for short operations lasting 10 to 20 minutes, although in many cases its action can be somewhat prolonged by fractional administration after the initial dose has been injected. The patient wakes quickly as the effect of the drug wears off, and there are practically no after-effects.

Some surgeons employ intravenous anesthesia for ambulatory patients who come to the hospital for change of painful dressings or stretchings and manipulations. This type of anesthesia is especially useful in the fluoroscopic room and in short operations around the head and face and in the oral cavity. The contraindications are cardiovascular and renal diseases, respiratory obstruction, and liver disease.—Boris Rapoport, M.D., in *Anesthesia and Analgesia.*

Among the exhibits at the Cleveland Health Museum are plaster casts taken from the hands of Dr. George W. Crile, the late Dr. Harvey Cushing, and the late Dr. Charles H. Mayo.

Water and Electrolyte Relations in the Body and the Use and Abuse of Sodium Chloride in Pediatric Practice

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THE fundamental principles underlying electrolyte and water balance in experimental animals and human subjects have been clearly outlined by J. L. Gamble, W. McK. Marriott, Alexis Hartman, Daniel C. Darrow, and many others. I shall take it for granted, therefore, that upon them I need touch only lightly.

Dehydration is usually due to loss of body secretions, which means a loss of water plus the isotonic electrolytes which this water contains, most body secretions being in osmotic equilibrium with plasma and interstitial fluid.

As dehydration progresses in severity, the interstitial fluids become absorbed into the circulation in order to support plasma volume and plasma concentrations of salts. At a certain point a critical change takes place, a point at which most of the interstitial fluids have been used up, so that continued losses from the body result in shrinkage of plasma volume; hemoconcentration is then evidenced by rising hematocrit and plasma protein values, and clinically by the picture of shock. In this state usually we find a lowered concentration of total base, chlorides, etc., per 100 c.c. of plasma, the implications of which are as follows:

In the first place, these low levels indicate that the organism permits a drop in concentration of electrolytes in preference to the added hemoconcentration that would occur if water itself were excreted in amounts sufficient to keep the levels of sodium and chloride up to normal. These changes I have attempted to illustrate in Chart 1.

In the second place, as regards the patient, such low levels of electrolytes are a danger signal. Treatment must be vigorous and must not be delayed.

When we are dealing with a child suffering from severe dehydration, the laboratory is of practical aid to us in certain specific respects:

1. The levels of total base and chloride serve as a guide to the severity of the dehydration, particularly when backed up by hematocrit and plasma protein determinations.

2. The blood urea nitrogen determination, if elevated, gives warning of kidneys thirsting for fluid.

3. The bicarbonate determination tells us to what extent the dehydration present is accompanied by the state of acidosis or alkalosis (Chart 2).

From the laboratory, however, we have no way of learning how great the fluid loss has been prior to the beginning of hemoconcentration.

Severe dehydration implies the loss of large amounts of water, and usually of electrolytes. If the losses have been exactly proportional, the levels of total base and of chloride in the plasma remain approximately normal. Usually these levels are low, however, and indicate an attempt on the part of the body to retain water as such in the interests of maintaining the volume and fluidity of plasma. Thus, low electrolyte levels constitute a red flag, warning us that hemoconcentration has commenced, but give no reliable clue as to the magnitude of losses.

The term "dehydration," of course, we recognize as a poor one, since the word implies only loss of water, completely failing to suggest any parallel loss of salt. Occasionally, however, one is faced by the situation of true dehydration, i.e., water loss without much electrolyte loss. As an example, let me cite twin infants, 11 months of age, who were admitted to the hospital with mild enteritis, from which both were apparently recovering. Suddenly, however, the situation changed. First one, and then the other developed extreme hyperpnea, became stuporous, and within 48 hours died. Clinically, they both seemed very dehydrated, which in fact they were; also, they seemed much more acidotic than their bicarbonate levels of 29 and 24 per cent would suggest. From their appearance one would have suspected that these infants needed

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Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 3, 1940.

large amounts of lactate and salt solution. Strange to say, however, total base determinations and chloride levels were far above normal. It became obvious that the extremely rapid and deep breathing was not due solely to acidosis, and in addition that *it* was the cause of water loss, pure and simple, by way of the lungs.

At autopsy, the explanation became apparent. Both twins had massive hemorrhages involving a large area of the cerebral cortex, which on microscopic examination were shown to be due to thrombosis and rupture of arterioles, secondary to occlusive endothelial proliferation. Of course, nothing could have been done to save these two infants, but from the standpoint of water and electrolyte balance it was logical to give large amounts of intravenous glucose solution, as was done in the case of the second twin, restricting salt intake to a minimum. In neither infant did we succeed in replacing water as rapidly as it was being lost, and we felt that most of the loss was via the lungs, a process which was, here, greatly accelerated by fever and hyperpnea of central as well as chemical origin (Chart 2).

Referring back to the subject of this paper, it is obvious that the case histories I have touched upon illustrate one potential abuse of salt solution. Other more common situations may arise where salt in excess has disadvantages.

In connection with surgery, the fluid needs are particularly variable. Certain operations such as an uncomplicated appendectomy, speedily performed, may be attended by very little loss of water and electrolytes. Other procedures involving prolonged anesthesia, with much sweating and hyperpnea, entail far greater fluid loss, superimposed often on a preoperative deficit due to prolonged inability to retain liquids by mouth or to losses of fluid by bowel. One should attempt, therefore, to estimate the probable magnitude of fluid loss preliminary to its replacement, keeping in mind the fact that with respect to water one has a reasonably free hand, but that, as regards salt, a certain exactitude is desirable. Flooding a patient who does not need

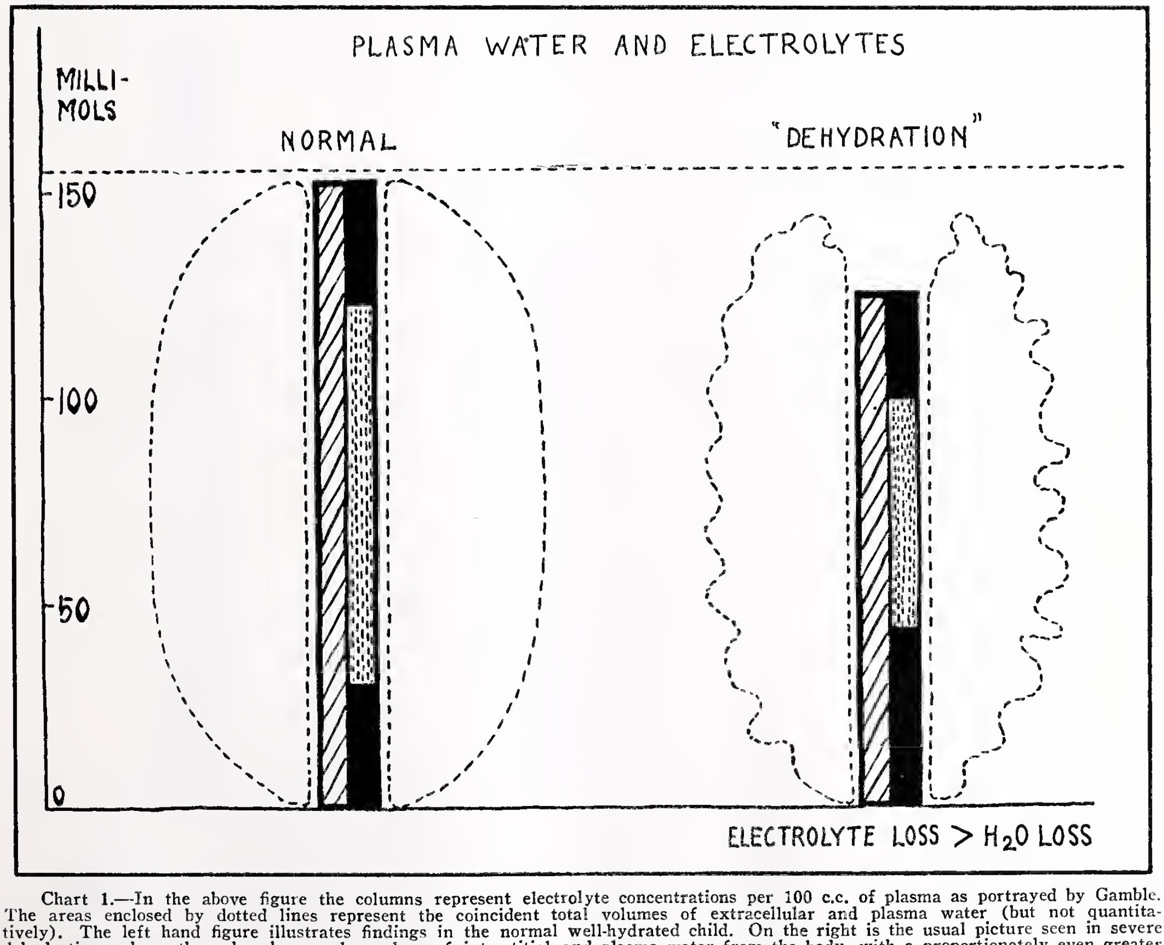

Chart 1.—In the above figure the columns represent electrolyte concentrations per 100 c.c. of plasma as portrayed by Gamble. The areas enclosed by dotted lines represent the coincident total volumes of extracellular and plasma water (but not quantitatively). The left hand figure illustrates findings in the normal well-hydrated child. On the right is the usual picture seen in severe dehydration, where there has been a large loss of interstitial and plasma water from the body, with a proportionately even greater loss of electrolytes, so that the concentration of electrolytes per 100 c.c. of fluid is below the "normal." (In the columns, the striped area is total base, the black at the top is bicarbonate below which come "chloride" (stippled), and the "remainder" (black), which includes sulfate, phosphate, organic acids, and protein.)

it with physiologic saline solution will at times produce an actual edema of the tissues and a dilution hypoproteinemia, which certainly should be avoided.

Another situation which I wish to touch upon is dehydration accompanied by acidosis or alkalosis. In these states there has been an unbalanced loss of either the sodium or the chloride ion. We shall assume that a patient has marked acidosis, with hemoconcentration and shock. He needs restoration of plasma volume, and physiologic salt solution will perhaps accomplish this end, but in a purely additive fashion. Roughly speaking, if one administers 1000 c.c. saline solution, the patient's weight will go up by that amount, and the dehydration, but not the acidosis, will be benefited. Little diuresis occurs, because the tissues soak up the salt solution like a sponge. The kidneys, moreover, are not functioning properly because of diminished plasma flow, diminished blood pressure, and increased plasma viscosity. To correct the acidosis, one must keep in mind the necessity for improving the urinary output in order that acid ions may be eliminated and alkaline ions selectively retained. This is why specific treatment of acidosis calls for the use of weak glucose solution in large amounts, in addition to salt solution and a certain amount of sodium lactate solution. The glucose is primarily a vehicle for water administration without electrolytes to produce a planned diuresis, and only secondarily is it for the purpose of combating ketosis. The same argument, of course, applies to states of dehydration with alkalosis.

It is obvious that the administration of salt solution in which glucose is dissolved is unsatisfactory for routine use, since it supplies no "extra water." In preference to that we have for some years been using one-half strength salt solution containing 2½ per cent glucose. Frequently, one is forced to explain in detail how this solution should be made up; namely, by mixing equal quantities of physiologic salt and

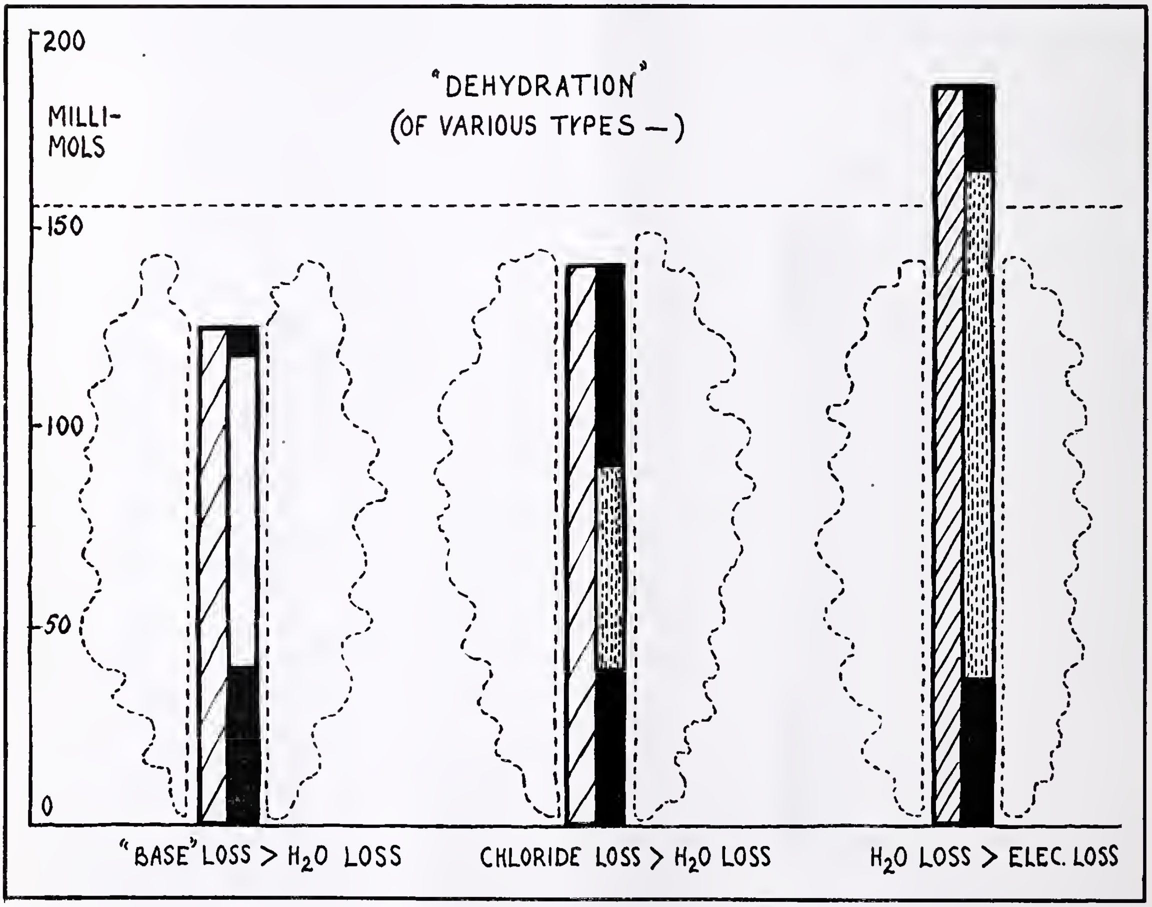

Chart 2.—The left hand figure illustrates the dehydration and acidosis which accompany diarrhea, etc., with a reduction of electrolytes and of interstitial water. The middle figure represents the dehydration and alkalosis caused by high intestinal obstruction with enormous loss of chlorides through vomiting; in both of these situations proportionately less water than electrolyte has been lost. The right hand figure illustrates the rare situation of true "dehydration," where water loss has outstripped electrolyte loss, resulting in concentrations of total base, chlorides, etc., far above normal (and due in this instance to excessive hyperpnea from massive cerebral hemorrhage). It serves as an extreme example of the potential lack of correlation between plasma electrolyte concentrations and magnitude of water loss.

5 per cent glucose solutions. This mixture is appropriate in numerous situations where physiologic saline solution is customarily used—conditions such as dehydration of the newborn infant, the dehydration of pneumonia, where it is particularly important to guard against excessive salt intake, and the prophylactic use of fluids following operations, gastro-intestinal disturbances, etc., that are not necessarily very severe. And this is especially true if water cannot be taken by mouth on account of vomiting or for other reasons.

In summation, let me say:

1. We must attempt to measure or to estimate better the extent of fluid loss preliminary to its replacement. There is no rule of thumb—one patient may require much water and very little electrolyte, and another, a balanced amount of both.

2. Dehydration has already reached a critical degree if we wait for evidence of hemoconcentration and subnormal total base levels.

3. Extra water, for purposes of selective diuresis, is usually of advantage to the patient, and is given in the form of 5 per cent glucose solution under the skin, mixed with varying amounts of physiologic salt solution according to indications.

ABSTRACT OF DISCUSSION

CHARLES F. ELTERICH (Pittsburgh): The use of parenteral fluids in the instances of various childhood maladies has been one of the great landmarks of pediatric progress. But, like all good things, it may be overdone, and in our humble opinion it has been used excessively. It, therefore, seems very fitting and pertinent to have Dr. Wilder's provocative paper to review and discuss (1) when and when not to give parenteral fluid, and (2) if fluid seems indicated, in what amounts, and of what nature?

Let us consider the most common conditions in which we are apt to resort to this measure of therapy.

Perhaps the most effective use of parenteral fluid is in the various cases of gastro-enteritis. In these cases we are confronted not only with water loss, as a result of vomiting and loose frequent stools, but we must bear in mind that these patients are also toxic as a result of poisoning by the products of the pathogenic organisms. This poisoning is manifested by altered blood chemistry—increased nonprotein nitrogen, urea, and inorganic salts. Vomiting causes a moderate loss of acid ions. Frequent watery stools, as a rule, result in an even greater and more deadly loss of basic ions. This gives us our cue for management. In most cases of diarrhea we recommend, if at all possible, the immediate measurement of the carbon dioxide combining power of the blood. If the child is shown to be in acidosis, we are in the practice of replacing the lost alkali with sodium bicarbonate in a 5 per cent solution of distilled water with equal parts of 5 per cent glucose solution. The amount, in grams, of sodium bicarbonate is calculated by means of the formula: (0.026 Gm.) . (x*) . (body weight in Kg.).

During the past year we have frequently employed a one-sixth molar sodium lactate solution to bring the carbon dioxide combining power of the blood to normal limits. The formula for this solution is: (0.3) . (x†) . (body weight in Kg.) (6.0) = cubic centimeters of one-sixth molar sodium lactate solution.

In marantic infants who have vomited persistently from hypertrophic stenosis of the pylorus, as a rule, we have an altered blood chemistry in which there is a greater loss of acid ions. In these cases we are wont to determine primarily the blood sodium chloride level. If it is found to be low, we replace the deficit at once, making use of the following formula: (0.5 Gm. NaCl). (x‡) . (body weight in Kg.).

It has been our experience that the popularization of the Wangensteen suction apparatus, and its use in ileus, may cause a chemical embarrassment to the patient by the excessive loss of chloride ions that is as serious as the primary condition.

We wish to emphasize that the Wangensteen technic, while a valuable development in surgical therapy of intestinal obstruction, is a potent procedure in a small child. It must be instituted and managed with cautious chemical observation.

In our observations, we have been a little dismayed at the excessive use of parenteral fluids in many cases of pneumonia. We believe that the intravenous use of fluids is seldom indicated in acute cases of this disease. Not only is the circulation of these patients embarrassed by the additional fluid but the damaged lung tissue is unable to cope with the excretion of the excessive fluids. The pneumonic child may be said, in effect, to be drowned by the injudicious addition of water, salts, and sugar.

In conclusion, we wish to say that we heartily agree with the essayist's view that every effort (clinical and chemical) to measure and estimate the extent of fluid loss should be made before replacement is attempted.

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* Deficit in CO_2 volume per cent.

† Deficit in CO_2 volume per cent.

‡ Deficit in 100 milligrams per cent of plasma sodium chloride.

Psychotherapy in the simpler functional disorders is not a prerogative solely of the neuropsychiatrist, but should be handled in the general practitioner's office. See page 1483.

Roentgen-Ray Therapy for Benign Otorhinologic Conditions

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THE widespread employment of roentgen therapy in the treatment of benign acute, chronic, and inflammatory otorhinologic conditions suggests that this method is of considerable value, particularly when employed as an adjunct to the routine care and treatment of such infections.

As early as 1902, it was found that various dermatologic and other allied conditions, i.e., herpes zoster, eczema, adenitis, etc., responded favorably to roentgen therapy. But, somehow or other, this therapy fell into disuse. Whether this was because of lack of knowledge of the action of the rays, the technic then employed, or the lack of standardization of the dosage, is not for us to discuss at this time. We do know that up until recently, irradiation was employed only in cases of malignancy and in extremely moribund cases where other forms of treatment had failed or were of no avail. Today, however, we feel that roentgen therapy has a distinct place in the armamentarium of otorhinology, and its recognition is well founded upon clinical and scientific bases.

Experience has taught us that in acute inflammatory conditions small or moderate doses frequently repeated are far more effective than large doses, and that in chronic conditions larger doses help to influence the desired effect. Also, when local symptoms, such as pain, headache, rhinorrhea, otorrhea, and general septic symptoms, such as temperature, etc., persist beyond the acute stage, irradiation very often brings about an abatement of the symptoms. We can attribute this to the fact that roentgen therapy helps the disintegration of the lymphocytes and thus liberates the enzymes, promotes phagocytosis, and in certain conditions aids localization and liquefaction of the tissues, and, last but not least, promotes resolution.

It would not be amiss to emphasize that we must not allow ourselves to become overenthusiastic over any one form of therapy; and, although we have obtained some gratifying results, irradiation is not a panacea and is not effective in all cases. It is frequently instituted haphazardly or empirically in conditions not suitable for such treatment, and in such instances the end results are naturally failures. However, if it is employed rationally and in selected cases, the desired effect may be obtained. It is therefore of utmost importance that there be complete co-operation between the roentgenologist and otorhinologist so that results and controls may be evaluated. Then, and then only, will irradiation be of definite therapeutic value.

We shall therefore discuss roentgen therapy generally as an adjunct in the routine care and treatment of the following conditions:

OTOLOGY

1. Cellulitis of the external auditory canal.
2. Eczema of the external auditory canal.
3. Erysipelas coincidental with mastoiditis.
4. Deafness of the conductive type due to lymphoid tissue about the eustachian orifice.
5. Acute suppurative otitis media.
6. Acute mastoiditis.
7. Chronic suppurative otitis media.
8. Persistent otorrhea following mastoidectomy.

RHINOLOGY

9. Cellulitis or furunculosis of the ala nasi.
10. Sinusitis:
    a. Acute
    b. Chronic { Hypertrophic, Atrophic, Hyperplastic
        (1) With polyps
        (2) Without polyps
    c. Allergy
    d. Rhinorrhea
11. Adenitis
12. Surgical parotitis

Cellulitis of the External Auditory Canal

With few exceptions, all cases of cellulitis of the external auditory canal are handled in the customary manner, irradiation being employed

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Read before the Section on Eye, Ear, Nose, and Throat Diseases of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

From the Department of Otology, School of Medicine, Temple University.

in conjunction with routine care and treatment. We invariably apply an antipruritic such as picric acid (1 per cent aqueous solution) so as to alleviate the unbearable itching. The area is painted directly with 100 per cent silver nitrate (pearl) followed by infra-red therapy for about 20 minutes, the approximate distance being 20 inches. Tamponage of the external auditory canal with ichthyol and belladonna ointment, 10 per cent glycerite tannin, or a 2 per cent silver nitrate solution is employed.

The interesting feature about irradiation is that the periauricular adenitis and pain often subside within a few hours after treatment. Of course, there have been cases where the pain persists despite the exposure; therefore, sedation may be necessary.

We have found that the following factors were sufficient to ameliorate the symptoms: 89 kv., 5 ma., 14″ skin target distance, no filter, 100 r.

Incidentally, we must bear in mind that recurrent cellulitis and furunculosis may have a basic cause for their occurrence and recurrence, such as diabetes, hypothyroidism, and various other metabolic or glandular disturbances. Therefore, a rapid therapeutic success should not distract us from seeking the underlying cause.

Eczema of the External Auditory Canal

We are all aware of the fact that eczema of the external auditory canal is an acute or chronic disease of the skin, the causes whereof are many. Allergy, metabolic disorders, or adjacent infections of the skin and scalp seem to influence the development of the disease.

When eczema is due to a suppuration of the middle ear or to various local medications, it comes within the province of the otologists. However, the otologist sees many cases of eczema of the canal in which itching is the most pronounced symptom, without evidence of suppuration.

We have found that local applications, i.e., astringents and antipruritics, in conjunction with roentgen therapy (89 kv., 5 ma., 14″ skin target distance, no filter, 100 r) every 6 days for about 6 treatments tend to alleviate the unbearable pruritis and to aid in clinical improvement. Dermatologic measures directed to concomitant skin infection should be carried out.

Erysipelas Coincidental with Mastoiditis

Erysipelas coincidental with mastoiditis, preoperatively or postoperatively, does not differ materially from the same lesion in other parts of the body. It rarely remains localized and has a tendency to spread to some extent to the face and scalp.

The dosage must be heavy (200 r) to produce the best results, and it is important to expose a large area so as to affect the surrounding tissues and their circulation. One can expect a satisfactory recovery within 24 to 48 hours after irradiation. If new erysipeloid areas develop, a larger dosage should be administered.

Incidentally, as an adjunct, sulfanilamide is given in physiologic doses.

Conductive Deafness

Conductive deafness, due to lymphoid tissue about the eustachian orifice, or caused by hypertrophy or hyperplasia of the mouth of the eustachian tubes in the region of the epipharynx, responds well to roentgenotherapy. (I might, in passing, also suggest direct application of radium.) It is essential, however, to determine beforehand the cause of the lymphoid tissue, particularly where an adenoidectomy was performed. We recently found malignancy in 3 such cases and the diagnosis was confirmed by biopsy. Incidentally, there was a temporary improvement in hearing during the recession of the growth.

On the other hand, lymphoid hypertrophy may also be due to a recurrent or chronic suppurative sinusitis which produces an irritation of the pharyngeal tissue resulting in hypertrophy or hyperplasia. Thus, there is deafness due to an encroachment and partial closure of the eustachian orifice (soft tissue).

With the employment of the following factors—135 kv., 5 ma., 14″ skin target distance, ¼ Cu., 150 r—once weekly for about 8 treatments, very definite improvement of hearing is noted.

Acute Suppurative Otitis Media

In our experience we have found that x-ray therapy has no therapeutic value in the treatment of acute suppurative otitis media. We have experimented with a number of cases of bilateral suppurative otitis media wherein x-ray therapy was employed unilaterally, while the opposite side was treated in the orthodox fashion. We found that the roentgenotherapy had no apparent effect on the progress of improvement. In fact, the ears that were treated in the orthodox manner responded well, resulting in a "dry ear," while in a number of instances where the ears were treated with x-ray therapy they terminated in surgical mastoiditis. I, therefore, condemn rather than recommend roentgenotherapy in acute suppurative otitis media.

(Note: The author has observed that when an acute suppurative otitis media responds to irradiation, it is due to the effect of the rays upon the lymphoid tissue around the eustachian tube, resulting in the patulence of the eustachian tubes. This in turn creates drainage of the middle ear rather than producing a direct effect upon the otitis media.)

Acute Mastoiditis

Roentgen therapy in acute mastoiditis has a limited field. Only selected cases are suitable and respond to this type of therapy. Caution should therefore be the byword. It may be employed without danger in coalescent mastoiditis and in the pneumatized temporal bone, provided there is ample drainage.

Roentgenotherapy is of no value in Type III pneumococcic mastoiditis, nor in mastoiditis superimposed upon a diploic mastoid process.

Chronic Suppurative Otitis Media

Chronic suppurative otitis media not due to bony necrosis, but the result of an overgrowth of granulation tissue, often responds to roentgenotherapy where other rational lines of treatment have failed. Tight packing and drying dusting powder, in conjunction with 50 r to the infected ear twice weekly for 2 or 3 months, depending upon the response, will bring about a satisfactory termination.

Persistent Otorrhea Following Mastoidectomy

From the patient's point of view, success can be determined only by a resultant dry ear. From the otologist's point of view, cessation of aural discharge following a radical mastoidectomy is not an indication of success or failure; it is nevertheless an object worthy of achievement.

Roentgenotherapy has produced a cessation of the suppuration following the radical operation where orthodox methods have failed.

The peculiarity of the anatomic and histologic structures of the temporal bone and the middle ear often lends itself to a persistent otorrhea, despite an excellent technical operative exenteration of the diseased process.

The principles of the treatment of persistent otorrhea following mastoidectomy are not unlike the principles of treatment undertaken for chronic suppurative otitis media. The otologist frequently objects to a radical procedure on the ground that the patient, by necessity, will be forced to continue treatment for the persistent discharge following the operation.

Since our subject deals with x-ray therapy in the treatment of otorrhea following radical mastoidectomy, we shall not attempt to go into the matter of general and local treatment, but shall describe the technic employed in cases of persistent otorrhea following mastoidectomy where many methods failed to produce a "dry ear." Roentgenotherapy succeeded where other treatments have failed.

Fifty r to the ear twice weekly was the dosage for 2 or 3 months, depending upon the results. A small area was used and the ray directed at the external auditory meatus, the dosage being 160 kv., 50 cm. skin target distance, ½ mm. Cu., and 1 mm. Al. filter, for 2½ minutes.

The effects of the roentgenotherapy may be due to its direct effect upon the newly formed granulation tissue. It is nature's law that the more the structure approaches the embryonic type, the greater will be the response to irradiation. That the roentgen ray destroys the embryonic tissue, i. e., newly formed granulation tissue, is well known, and succeeds in producing the so-called "dry ear."

Cellulitis or Furunculosis of the Ala Nasi

Cellulitis of the face and naris is a dangerous as well as a treacherous condition, particularly if early surgical interference is instituted before localization has taken place. It is not uncommon for this malady to terminate in cavernous sinus thrombosis, septicemia, or meningitis. In my own experience, I have seen 4 cases terminate in cavernous sinus thrombosis.

At the present time we attempt to abort or localize the infection by applying 100 per cent silver nitrate (pearls) to the infected area in conjunction with irradiation. We have found that 100 r is more likely to bring forth a favorable response than a larger dose. The factors employed are: 89 kv., 5 ma., 14″ skin target distance, no filter, 100 r. It sometimes aborts the infection following exposure, helps to relieve the pain, and facilitates drainage. It causes no skin damage and may be repeated several times when necessary.

Sinusitis

It is understood that a sinusitis represents different stages of the disease, or, in other words, one is a sequel to another. Some cases represent a gradual conversion from the acute to the chronic stage and, therefore, their response to treatment will differ. However, since the subject deals with roentgen therapy, we shall consider the sinuses from a histopathologic standpoint only rather than take each sinus individually.

Acute Sinusitis.—We have found that it is dangerous to employ roentgen-ray therapy in an acute sinusitis unless there is ample drainage. If an exposure is given where there is a lack of drainage, tissue edema is apt to occur and emergency surgery may be necessary. Therefore, we do not advocate x-ray therapy in the early acute sinus infection, but rather suggest the routine treatment either in the form of sprays, drops, or the displacement method. In many instances it becomes necessary to induce drainage by infraction of the turbinates, by puncture of the antra, or by rasping of the frontal sinus. Irradiation would therefore be valueless in an acute sinusitis of this type. Only when we find that there is ample drainage, with acute pain, localized headache, and fever, will roentgenotherapy help hasten recovery.

In acute cases of sinusitis with ample drainage, 105 r is given anteroposteriorly and to right lateral and left lateral fields. The factors used are 132 kv., 5 ma., 35 cm. skin target distance, and ¼ mm. Cu. Each field is 10 cm. by 15 cm. One area is treated daily. The entire course of treatment is repeated at the end of a week.

Chronic Sinusitis.—The hypertrophic type of sinusitis presents such symptoms as cough, impairment in respiration, etc., which have been present from several months to several years. There is a history of recurrent rhinitis, and routine treatment including antral washings, etc., gives no relief to the patient. The hypertrophic type of sinusitis responds slowly to irradiation. It would naturally follow that in chronic inflammation the dosage would be larger than that of an acute inflammation.

The hyperplastic type without polyp formation and which is not ascribed to hay fever or to allergic phenomena often responds to the type of irradiation given to the hypertrophic type. However, the results sought are not as frequent nor as gratifying. Hyperplastic sinusitis complicated by multiple polypi does not respond at all to irradiation.

In our experience we have found that where polypectomy and radical surgery have been performed, in about 75 per cent of the cases there will be no recurrence of polyp formation when x-ray therapy is instituted within a few days after radical surgery.

In the atrophic type, x-ray therapy is definitely contraindicated. Although at one time it was thought that small stimulating doses might be of value, today we feel differently. We know that the good clinical results in the hypertrophic and hyperplastic sinusitis are due to the formation of mature fibroconnective tissue. In atrophic rhinitis, the predominant element is fibroconnective tissue, and x-ray therapy will only aggravate rather than improve the atrophy.

Allergy.—X-ray therapy is contraindicated in all cases of active nasal allergy. We have seen several cases of allergic vasomotor rhinitis which almost terminated fatally because x-ray therapy was employed. One case in particular developed meningeal symptoms with 2000 cells in the spinal fluid; in another case an emergency external frontal sinus operation had to be performed because of edema of the mucous membrane and impediment in drainage. Should such a reaction take place, it is advisable to give large doses of atropine, adrenalin, para-thor-mone hypodermically, and calcium gluconate intravenously. These drugs should be given rapidly and frequently with the hope that the tissues will respond and will contract rapidly. In conjunction with this, it is advisable to posture the patient and instill into the sinuses neosynephrin and ephedrine (½ per cent solution) in normal saline.

Rhinorrhea.—We shall consider this particular type because it is due to hypersecretion of the mucous glands without any known etiologic factor. The symptoms presented are cough, which is very annoying, and prenasal and postnasal watery discharge. Atropine sulfate does not seem to control the symptoms. We have found that x-ray therapy of 100 r 3 times weekly given for about 12 treatments often produces cessation of the secretions and disappearance of the associated symptoms. The following factors were used: 135 kv., 5 ma., 14″ skin target distance, ¼ Cu., 100 r.

Adenitis

Adenitis, particularly cervical adenitis, responds rapidly and favorably to irradiation. In most instances resolution is the outcome after roentgenotherapy. Occasionally, coalescence of the glands takes place with pyogenic localization, and the complex symptoms of the glandular fever terminate when the pus is evacuated.

One hundred r, every other day, depending upon the reaction and the response, will help bring about a satisfactory termination. The following factors are employed: 135 kv., 5 ma., 14″ skin target distance, ¼ Cu., 100 r.

Surgical Parotitis

Surgical parotitis, which often follows otorhinologic surgery, at one time was considered extremely serious, especially in the female adult. At the present time, we know that this condition responds rapidly and favorably to irradiation.

One hundred r repeated at frequent intervals, depending upon the response, invariably brings about a subsidence of the temperature within 24 to 48 hours and an abatement of the edema of the parotids.

Summary

1. Roentgen therapy is now recognized as a valuable therapeutic aid in the routine care and treatment of benign otorhinologic conditions.

2. In conjunction with the treatment by the rhinologist, selected cases of sinus infections, as well as aural infections, can be benefited by roentgen therapy.

3. Where routine care and treatment in sinusitis have failed, roentgen therapy may bring about a successful result.

4. Conductive deafness, due to lymphoid tissue about the eustachian orifice, responds well to roentgenotherapy.

5. A persistent otorrhea following radical mastoidectomy sometimes does not respond well to the various routine methods of treatment; but roentgenotherapy, by destroying the granular tissue, either permits epidermization of the middle ear or the formation of mature fibroconnective tissue, thus resulting in a "dry ear."

6. Roentgenotherapy is another therapeutic aid in our armamentarium in treating selected cases of chronic suppurative otitis media and otorrhea following radical mastoidectomy.

7. Roentgenotherapy may be effective in some cases, but it is not a panacea.

8. Co-operation between the otorhinologist and the roentgenologist is of the utmost importance if the best results are to be obtained.

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ABSTRACT OF DISCUSSION

Robert K. Arbuckle (Philadelphia): The radiologists in our department are in complete accord with the statement of Dr. Ersner that radiology is not a panacea for many of these conditions he has discussed.

If we group the acute cellulitis, surgical parotitis, furunculosis, and erysipelas cases into one broad group, these are best treated from the radiologist's point of view by using superficial therapy without filtration. The dose should be small, the area small or large, depending upon the condition of the patient at the time and the extent of the lesion. Many of these patients are treated twice the first day and once or twice the second day. We do not need to bear in mind the same facts that we do when treating neoplasms insofar as the skin is concerned. These inflammatory lesions respond very promptly and thus the total dose delivered is well within the limits of skin tolerance. The individual dose may vary from 50 r to 100 r, as Dr. Ersner has stated, and we do not hesitate to carry the total dose over the period of 2 or 3 days to as much as 500 r without filtration.

In the more chronic conditions, such as eczema of the auditory canal and conductive deafness, we believe that they should be treated with small doses at intervals of 3 to 7 days. Higher kilovoltage and some filtration are necessary, as a rule, in these cases. Many of the cases of chronic eczema and seborrheic dermatitis have had prolonged treatment by ointments. Discontinuance of local medicaments has appeared to be a factor in the marked improvement noted in some cases. It is advisable to discontinue ointments when roentgen therapy is being administered.

We like to accept cases of acute mastoiditis and acute suppurative otitis media only with the full co-operation of the otologist and with a definite decision made on his part that the patient should be treated. As previously pointed out, even though we have x-ray film studies of the mastoid that show no evidence of bone destruction, it may still be too early for us to be able to detect this by the usual signs of loss of trabeculations and the decreased mineral content of the mastoid cells with resultant breakdown. We have a standing rule that once treatment is started on cases of acute mastoiditis or an otitis media, if the patient does not show immediate response, the treatments are discontinued and the patient is again seen in consultation with the otologist.

The treatment of lymphoid hyperplasia at the ostium of the eustachian tube can be either by x-ray therapy or by radium. If we use x-ray therapy, we believe that larger doses are indicated and that higher kilovoltage and more filtration are essential than when used in superficial lesions. When we use radium, it is applied in brass filtered capsules directly to the ostium of the tube and held at a few millimeters from the tube and not within the lumen.

Perhaps we may have something to offer in the treatment of selected cases of hyperplastic sinusitis, but we do not consider x-ray therapy indicated for atrophic sinusitis.

TO MEMBERS IN U. S. ARMY OR NAVY SERVICE

If you desire to have your *Pennsylvania Medical Journal* forwarded to your service address, please advise the Managing Editor, 230 State St., Harrisburg, Pa.

The Control of Gonadal Development

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Philadelphia, Pa.

NOTHING is more essential for continuation of the species than gonadal development. The primary functions of the gonads are (1) the production of germ cells, and (2) the production of sex hormones. A third vital factor is sexual drive or mating instinct, which depends to a large extent upon the presence of testis hormone. The absence of this all-important factor likewise would affect propagation materially.

In considering gonadal development, it is essential to review the more important embryologic features. According to Meredith Campbell, the gonads are derived as mesothelial thickenings of the anteromedial surface of the wolffian bodies (mesonephron). This mass becomes the germinal ridge and contains differentiated epithelial cells embedded in its connective tissue. Up to the sixth week, when the spermatogenic cells and the graafian follicles begin to appear, it is impossible to differentiate ovarian from testicular tissue. By this time, the wolffian and müllerian ducts are found transversing the germinal ridge longitudinally. The wolffian duct, joined above to the germinal tissue and below to the posterior urethra, is the seminal duct proper and later becomes the vas deferens. The müllerian ducts opening into the celomic cavity above and below unite in the mid-line to empty into the urogenital sinus. In the female, fusion of the müllerian ducts forms the uterus.

As growth continues the testicle progressively occupies lower levels, so that at the third month it is near the internal inguinal ring. A band of muscle tissue—the gubernaculum—passes from the lower pole of the testis to the lowermost scrotum. By this time a peritoneal pouch—the processus vaginalis—precedes further descent and extends through the inguinal canal and external ring into the lower portion of the scrotum. At the seventh or eighth month the testes pass through the abdominal wall via the inguinal canal to the external abdominal ring. By the time birth occurs the processus vaginalis has been obliterated, leaving the testicles in the scrotal cavity and distally forming the tunica vaginalis propria.

The mechanics of testicular descent are poorly understood. The theory that shortening of the gubernaculum draws the testicles downward into the scrotum is no longer accepted. It is believed generally that testicular descent is governed by 3 factors as first enunciated by Engle: (1) the gubernaculum serving as a tract but unaffected by hormonal stimulation since it consists of unspecialized tissue, (2) mechanical factors assisted by the various muscles and fascia, and (3) hormonal influences.

From the time of birth to the onset of puberty, little further development occurs. At about the age of 12, boys begin to grow more rapidly than girls. Among the changes observed at this period are the following: development of masculine bodily contour, appearance of pubic, facial, axillary, and body hair, alteration in pitch of the voice, enlargement of the penis, testes, vesicles, and prostate gland, and the appearance of sexual desire and erections. In the girl, menstruation furnishes a distinct sign of sexual maturity, but in boys the completion of puberty cannot be determined with the same exactness. Although the presence of sexual desire and erections indicate that part of the sexual mechanism is functional before the changes of puberty are complete, fully developed spermatozoa are not produced until this time. Thus the presence of functional spermatozoa in the testes constitutes the one certain sign that sexual maturity in the male has been attained.

The most important sign of sexual maturity in the girl is the appearance of menstruation. Many variations in the age at which this function occurs are encountered. In temperate climates the average age is 13 to 14 years. It is said to occur between 8 and 10 years in the tropics and between 15 and 16 in colder countries. Heredity and racial characteristics play an indefinite rôle, but variations from these causes are not wide. There is evidence that social con-

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dition and nutrition make some difference, i.e., the poor begin to menstruate later on an average than the well-to-do, possibly due to hard work and poor nutrition. Once the function appears, it occurs at more or less regular intervals of 28 days. Normal variations within limits of 21 to 35 days are encountered.

The secondary sex changes in the female begin at about the age of 11. The earliest features are development of the mammary glands, and rounded bodily contour characteristic of the female, appearance of pubic and axillary hair, relative absence of bodily hair, a relative increase in width of the hips, slenderness of the waist, and small bone structure. Growth of the genital organs of the female is slight during the first 10 years of life, but towards the age of 11, marked and rapid development, especially of the uterus, occurs. Full growth of the virginal uterus is attained after the onset of puberty.

In addition to other less important hormones, the anterior lobe of the pituitary elaborates two primary principles, the first concerned with growth, the second with sexual development. From birth to puberty the influence of the former is predominant; from puberty on the latter assumes the predominant rôle. Disturbances in the relationship of these hormones to each other and to those produced by the sex glands are frequent.

Insofar as the abnormalities of gonadal development in children are concerned, they may be divided into the following 4 major groups:

1. Congenital developmental anomalies.
2. Failure of or arrest in development.
3. Retarded development.
4. Precocious development.

Congenital Developmental Anomalies

Varied congenital anomalies are encountered in the genital organs. Unilateral or bilateral absences, fusions, or supernumerary testicles and ovaries are rare. In eunuchs, where the testicles are absent, there is no testicular secretion and no development of sexual characteristics. More commonly encountered are conditions resulting from incomplete fusion of the müllerian ducts in the female. These vary from an arched fundus to separation of the uterus and vaginal canal by a complete septum.

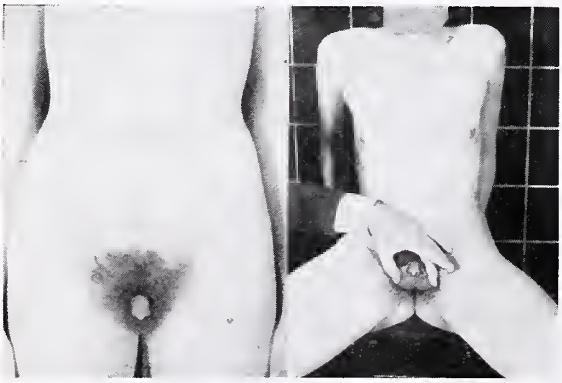

Fig. 1. Case 1, age 17. Note feminine configuration, enlarged mammary glands, transverse crines, penis or clitoris, perineal urethral orifice, wrinkling of labial folds. Surgical exploration revealed no abdominal female sex organs, and atrophic testicles in inguinal canals.

Next in frequency are cases of bisexual development. Although rare, cases of sex glands composed of both male and female elements (ovotestes), one of which is functional, have been recorded. As far as we know, there is no authenticated record of a human with duofunctional male and female sex glands. Thus the classification of bisexuality into hermaphroditism and pseudohermaphroditism is unnecessary. Varying degrees extending from the rare form of ovotestes associated with developmental abnormalities of both primary and secondary sexual characteristics to the much more frequent forms in which there are inconsequential psychic and somatic alterations in the individual makeup corresponding to those of the opposite sex are encountered. In the more masculine group, the müllerian ducts form a strand corresponding to the uterus, tubes, and a short vagina internally, and externally a short penis, hypospadias, a scrotal sac divided into 2 pouches resembling labia, and testicles which are frequently situated in the inguinal canal. In the female group, the wolffian duct persists as an elongated clitoris with agglutinated labia resembling a scrotal sac in which occasionally there may be found a herniated ovary.

Determination of true sex in these cases is difficult. Apart from the fact that the male type is more common than the female, the diagnosis of masculinity can be simplified by recognizing the following features: (1) the presence of a urethral groove on the undersurface of the phallus, (2) wrinkling of the labia due to the presence of cremasteric muscle fibers, and (3) sex glands palpable in either the inguinal canals or labial folds. Frequently, the onset of menstruation, erections, seminal emissions, or the development of other sex characteristics point to the correct diagnosis.

Case 1.—A patient, age 17, presented herself with the problem of determining her sex. She had been raised and accepted as a girl by her friends. Menstruation had not occurred. She had a slight biologic urge towards the male. Her voice was a contralto, the skin soft with a moderate amount of down on the face, hair in the axillae, and over the pubis and extremities. The waist was constricted, the width of the pelvis relatively increased, and the mammary glands were enlarged but consisted essentially of adipose tissue. The penis or clitoris measured 3 cm. in length and 1 cm. in diameter, the urethral orifice was in the perineum, no vaginal opening was present, there were 2 wrinkled sacs resembling labia, and in each inguinal canal was a firm globular mass 1 cm. in diameter. Surgical exploration had been performed, but no abdominal female sex organs were found, and the inguinal masses proved to be testicles. Microscopic examination of a biopsy specimen revealed testicular atrophy. Later, all phases of the condition were discussed frankly with the patient, and she was given the choice of sex. She elected to continue as a woman rather than to readjust her entire life. If a correct diagnosis had been established much earlier, this patient probably would have been saved considerable unnecessary mental anguish.

Cryptorchidism is the most frequent anomaly of the cord and testicle. Instead of being within the scrotum, the testicles are in the abdomen, inguinal canal, or below the lower inguinal ring in the prepubic, perineal, or femoral regions. The etiology is not fully understood, although the following explanations have been offered: (1) anatomic barriers which mechanically prevent descent, and (2) endocrine factors either alone or in combination with anatomic factors fail to provide a sufficient hormonal impetus for normal descent.

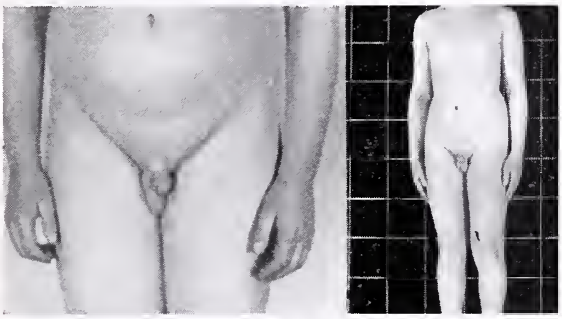

Fig. 2. Case 2, D. C., age 8. Right cryptorchidism. Treatment: 200 rat units of pregnancy urine hormone 3 times weekly for 8 weeks (total 4800 units). Right testicle descended in 6 weeks.

Of prime importance in treatment is an understanding of local and systemic pathology. Hernia is encountered in over one-half of the cases and some degree of testicular hypoplasia or atrophy in many of them. Just when this atrophy begins has not been definitely determined. It has been suggested by some that it begins as early as 3 years, although others feel that it does not occur until puberty. The atrophy consists of degeneration of the tubules and an increase in interstitial tissue. In a pubescent boy with bilateral cryptorchidism, there may be no manifestations of endocrine disorder or there may be evidence of primary pituitary dysfunction or eunuchoidism. In the 35 cases of cryptorchidism treated in this clinic, favorable responses were seen more often in cases which showed no signs of pituitary or testicular hypofunction. Diagnosis should not be difficult, the essential findings being that the gland is not present in the scrotum and that it cannot be forced into that position manually. One must eliminate sliding testicle or pseudocryptorchidism in which the testicle retracts into the inguinal canal. Many of these have been diagnosed and treated erroneously as cases of cryptorchidism, a fact which may account for the high percentage of cures with pregnancy urine hormone reported by some observers.

There exists considerable misunderstanding as to the proper age for starting treatment. The answer is found in a clear conception of the fact that the chances of atrophic changes and sterility are increased the longer a testicle remains in an abnormal position. It follows, therefore, that the earlier maldescent is corrected, the more likelihood there is of obtaining a functional organ. Although spontaneous descent may occur at puberty in some cases, pubertal changes in the testicles begin at age 8. To be most effective, correction of cryptorchidism should be completed by this age.

The treatment of cryptorchidism is (1) endocrine, (2) surgical, or (3) combined endocrine and surgical. Endocrine therapy deserves first consideration in every case except where associated surgical conditions (congenital hernia, hydrocele, or recurrent torsion of the spermatic cord) exist. In these instances, surgery is indicated from the start. As a rule, 200 rat units of pregnancy urine hormone (some recommend as high as 500 units) are administered 3 times weekly for 6 to 12 weeks. Failure to secure testicular descent after such a course calls for cessation of endocrine treatment and resort to surgical fixation of the testicle in the scrotum. Frequently, hormonal treatment preliminary to surgery is of value because of the congestion and enlargement of the parts which are produced. After surgery one may find an unde-

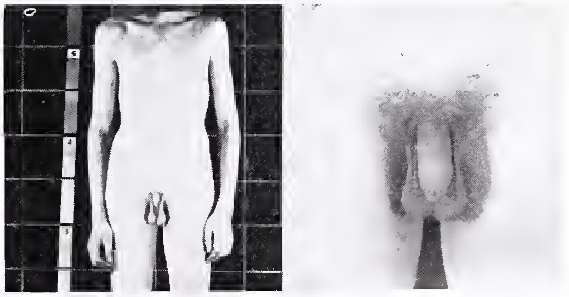

Fig. 3. Case 5, A. M., age 23. Complained of lack of sexual desire, small genitalia, infrequent erections, and suicidal tendencies. Typical eunuchoid features. Intensive therapy with gonadotropic factors for 1 year with no improvement. Treatment changed to testosterone for 20 months in doses of 10 to 25 mg. 3 times weekly, followed by 3 pellet implants in 4 months. Note marked improvement.

veloped testicle which should be stimulated to further development by continued administration of gonadotropic factors.

Our results with endocrine therapy have not been as striking as many report in the literature. In our series of 35 cases of true cryptorchidism* treated with hormonal therapy alone, cures were obtained in only 9, or 29 per cent. Although earlier investigators report success in from 50 to 75 per cent of the cases, more recent observers are not so enthusiastic, reporting success in only 25 to 33 per cent.

Case 2.—D. C., age 8, right testicle in inguinal canal. left normal in size and position. Treatment: 200 rat units of pregnancy urine hormone 3 times weekly for 8 weeks (total 4800 units). Right testicle descended into scrotum in 6 weeks, and was comparable in size to that on the left.

Case 3.—M. L., age 11, left testicle in inguinal canal, right normal in size and position; small amount of pubic hair present. Treatment: 200 rat units of pregnancy urine hormone 3 times weekly for 10 weeks followed by 500 rat units for 2 weeks (total 9000 units); no improvement. Endocrine therapy discontinued; Thorek operation performed. Left testicle remains in scrotum and is comparable in size to that on the right; changes incident to puberty progressing normally.

Case 4.—W. H., age 10, bilateral cryptorchidism, testicles palpable in inguinal canals, external genitals small. Treatment: 200 rat units of pregnancy urine hormone 3 times weekly for 3 months. Bilateral descent occurred in 6 weeks. Testicles were smaller than normal; therefore this treatment in combination with pituitary gonadotropic fraction and thyroid was continued for one year. The changes of puberty have appeared slowly. When seen last, at the age of 15, the patient showed signs of hypogenitalism.

The 3 cases just cited are illustrative of the usual results obtained in the treatment of cryptorchidism. Case 2 represents the simplest variety in which success follows a single short course of treatment. In contrast is Case 3, representing the type which does not respond to hormonal therapy. Here it becomes necessary to fix the testicle in the scrotum surgically, the end result being satisfactory. Case 4 illustrates what may follow either hormonal or surgical treatment. Although descent is obtained, the end result is not satisfactory because of hypogenitalism which necessitates continuation of stimulating therapy.

Failure or Arrest of Development

Unilateral atrophy of the testicle may be due to trauma or to infection such as mumps, tuber-

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* Great care was exercised in the selection of cases for treatment. Frequently, when undressed for examination or when cold, when a strong cremasteric reflex was produced by touching the thigh or scrotum, or even when the patient was apprehensive, the testicles were found in the inguinal canals rather than in the scrotum. Examination often could be facilitated by applying several hot wet towels over the pubis and scrotum to induce relaxation of the tissues. Only those patients were selected in whom the testicles were always abdominal or inguinal. Although no accurate figures are available, it is our impression that as many boys were rejected because of pseudocryptorchidism as were actually treated.

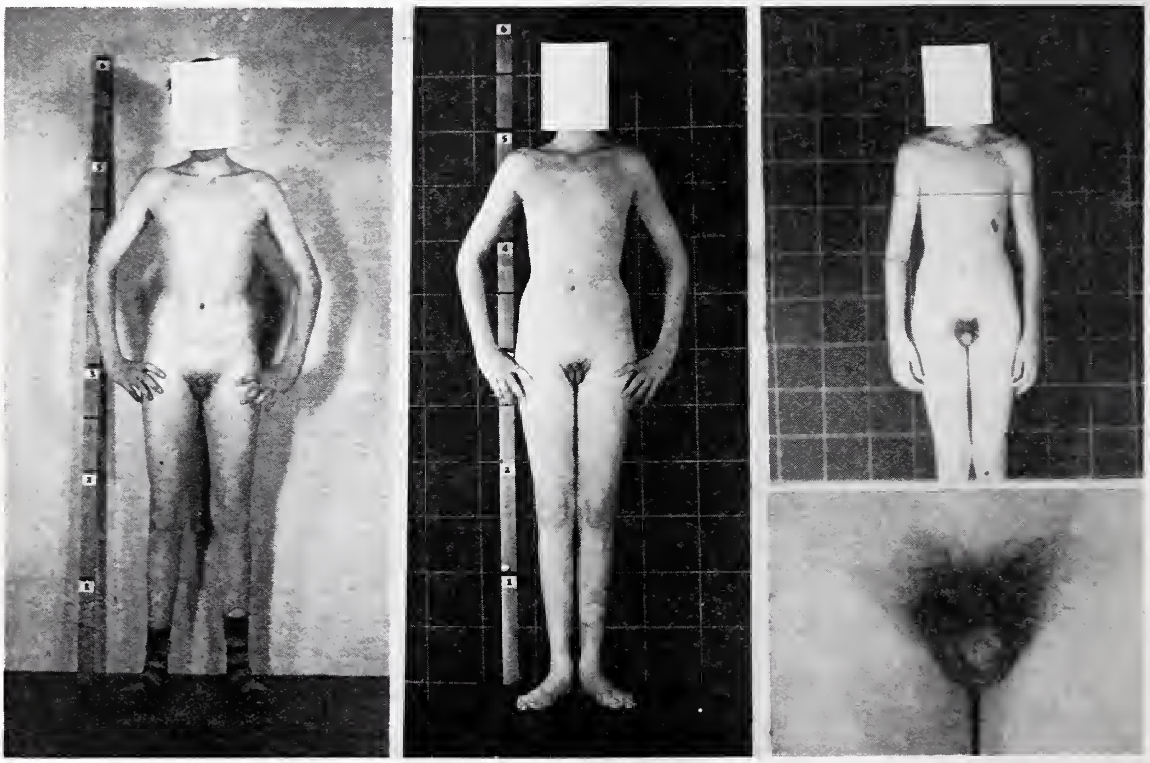

Fig. 4. Case 6, L. P., age 16. Operation for bilateral cryptorchidism at 10. Treatment with gonadotropic factors for 1 year with no improvement in eunuchoid features and size of genitalia. Therapy changed to injections of testosterone 10 to 25 mg. 3 times weekly for 9 months, followed by pellet implants. Note marked improvement.

culosis, syphilis, and gonorrhea. More rarely it is congenital. Bilateral atrophy of the testicles or eunuchoidism is primary when there is no evidence of other endocrinopathy. It may occur in typhoid fever or more rarely in severe vitamin B_1 deficiency or prolonged inanition. Usually, however, it is associated with hypofunction of other glands.

Although testicular secretion is not absent completely, it is always deficient in eunuchoidism. Two groups are recognized, the first characterized by disproportionate elongation of the extremities (primarily hypogonadism), and the second by obesity and physical as well as mental sluggishness (primarily hypopituitarism with secondary hypogonadism or adiposogenital dystrophy). Both groups have the following features in common: (1) hypogenitalism, (2) faulty development of secondary sex characteristics, and (3) bodily configuration suggestive of the opposite sex.

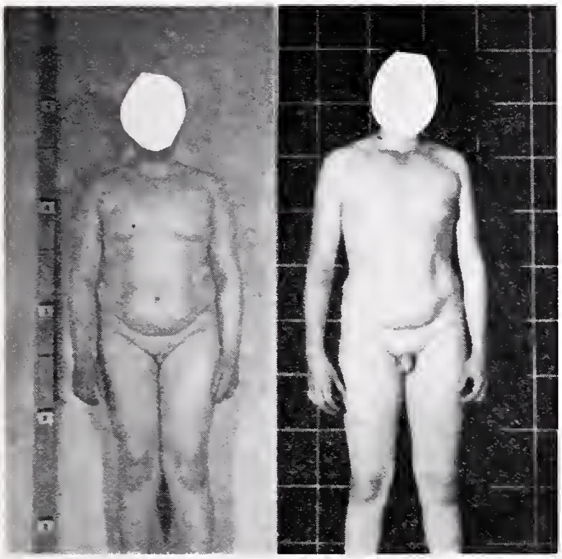

Fig. 5. Case 8, I. W., age 15. Weight 136 pounds, height 57 inches. Adiposogenital dystrophy. Fat pads about shoulders, mammary glands, hips, and upper thighs; abdominal apron of fat; external genitals small; dull mentally. Treatment with gonadotropic factors and thyroid for 1 year with no improvement. Treatment complemented by injections of 10 mg. of testosterone twice weekly for 6 months, with moderate improvement in appearance and size of genitalia.

Obese pubescent children have been diagnosed erroneously as cases of adiposogenital dystrophy, because the fat deposits seem to be pronounced about the shoulders, mammary glands, lower abdomen, hips, and upper thighs. Careful examination reveals that these patients lack hypogenitalism, dystrichosis, and show normal development of sex characteristics. Many lose their obesity during adolescence. Others assume normal weight following such simple measures as decreased food intake, increased exercise, and small doses of thyroid extract.

Features Primarily Those of Hypogonadism

Case 5.—A. M., age 23, complained of lack of sexual desire, small genitalia, infrequent erections, and suicidal tendencies. As a child he had measles, mumps, and pertussis without complications or sequelae. Weight 138 pounds, height 70 inches, vertex to pubis 32 inches, pubis to floor 38 inches, span 74 inches. Voice high-pitched, facial down with sparse axillary pubic and body hair, definite feminine bodily configuration, testicles in scrotum and measuring 1 cm. in diameter, penis 3x1 cm., prostate not palpable. Wassermann reaction negative; basal metabolism rate, —14. For over one year intensive treatment with gonadotropic factors of the anterior pituitary and pregnancy urine yielded negative results. Two years ago male sex hormone was administered in doses of 10 to 25 mg. 3 times weekly, depending upon the amount available. Improvement has been gradual, but striking. The patient states that he has sexual desire, daily erections, that he shaves once weekly, and has a normal interest in life. There has been an increase in the amount of pubic hair; the penis now measures 8x3 cm. and the testicles 3 cm. in diameter. Four months ago injections were discontinued, and pellet implants of male sex hormone substituted. Three implantations (300 mg. each) have been made at intervals of 2 months. Favorable improvement with the pellets has continued as satisfactorily as with the injections. This case represents a triumph for male sex hormone.

Case 6.—L. P., age 16, had an operation for bilateral cryptorchidism 6 years prior to first visit to our clinic.

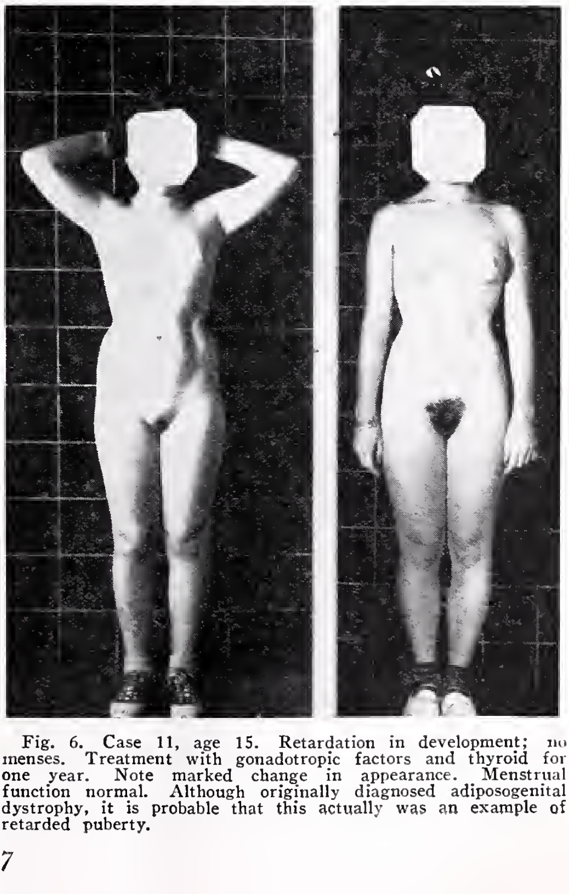

Fig. 6. Case 11, age 15. Retardation in development; no menses. Treatment with gonadotropic factors and thyroid for one year. Note marked change in appearance. Menstrual function normal. Although originally diagnosed adiposogenital dystrophy, it is probable that this actually was an example of retarded puberty.

At 14 the patient became sensitive about the small size of his genitals. He refused to do anything which required dressing or undressing in the presence of other boys. Weight 111 pounds, height 66 inches, vertex to pubis 30 inches, pubis to floor 36 inches, span 63 inches. Voice high-pitched, definite feminine bodily configuration, slight amount of facial down, no axillary and sparse pubic hair, external genitals similar in size to those of a newborn male infant, both testicles in scrotum. Intensive therapy with gonadotropic factors or anterior pituitary and pregnancy urine plus thyroid extract for one year yielded negative results. Treatment was changed to male sex hormone. For 9 months he received 3 times weekly 10 or 25 mg. depending upon the amount available. Under this régime he showed marked improvement. Two months ago the injections were replaced by pellet implants of male sex hormone. He has received two 300 mg. implants during this period. The penis now measures 4x1.5 cm., the testicles are 1 cm. in diameter, a slight amount of axillary hair is present, the amount of pubic hair has increased considerably, erections occur daily, and the patient has shaved twice. The improvement in the physical appearance and mental attitude has been remarkable.

The excellent results in Cases 5 and 6 are of a nature undreamed of in days gone by. In both instances, as well as in many others, we wondered whether male sex hormones would do more harm than good. It seems, however, that where satisfactory genital development cannot be obtained after prolonged administration of gonadotropic factors, sex hormones should be used under careful supervision.

Features Primarily Those of Hypopituitarism with Secondary Hypogonadism

Case 7.—L. R., age 9, complained of overweight and lack of sexual development; had measles, chickenpox, and pertussis as a child. Weight 123 pounds, height 61 inches, fat pads over shoulders, lower neck, abdomen, and thighs. The penis measured 2x0.7 cm. and had to be sought for in a large fatty mons veneris; left testicle in scrotum and about the size of a kidney bean; some tissue (testicle ?) palpable in right side of scrotum. Although this patient did not satisfy all the criteria essential for a diagnosis of adiposogenital dystrophy, his parents insisted on therapy. Treatment: 200 rat units of pregnancy urine hormone 3 times weekly for 6 months resulting in a moderate increase in the size of penis, scrotum, and left testicle, followed by 18 months of treatment with 2 c.c. of whole anterior lobe extract 3 times weekly. At the end of the second year of treatment this patient showed striking improvement: his weight was 123 pounds, height 63.5 inches, both testicles were in the scrotum and measured 1.5 cm. in diameter, and there was a moderate amount of facial, pubic, and axillary hair. At the age of 15, he was 72 inches in height, weighed 148 pounds, and showed normal development of both primary and secondary sexual characteristics.

Case 8.—I. W., age 15, complained of small genitals and overweight; had measles, chickenpox, pertussis, and a tonsillectomy performed as a child. His school work was so bad that at the age of 9 he was put into the orthogenic backward class where he has since remained. Weight 136 pounds, height 57 inches, appearance definitely feminine. Fat pads about shoulders, mammary glands, hips, and upper thighs, heavy abdominal apron of fat, both testicles in scrotum and measured 0.8 cm. in diameter, penis 2x1 cm., slight amount of facial and pubic down, but no hair in axillae. Basal metabolism rate, —8. Roentgen studies of sella turcica and epiphyses of long bones revealed nothing of note. Here obviously was a true case of adiposogenital dystrophy.

For 18 months this patient received intensive therapy with gonadotropic factors from pregnancy urine and anterior pituitary as well as thyroid extract. A restricted diet of 1200 calories and increased exercise were also ordered. Improvement consisted of a loss of weight of 10 pounds and an increase in height of 4 inches. The rolls of fat, the infantile genitalia, and the lack of development of the secondary sex characteristics remained essentially unchanged. Six months ago this treatment was complemented by injections of 10 mg. of male sex hormone twice weekly. Erections have appeared, and there is a slight increase in the size of the external genitals. There can be no doubt that in this patient gonadotropic hormones were of little or no value. Substitution therapy with male sex hormone has given encouraging results, and it may be necessary to change completely to this form of treatment, probably in larger doses, before marked improvement is obtained.

Case 9.—E. Z., a female, age 18, complained of overweight and failure to menstruate. She had pertussis, measles, and mumps as a child. Her school work was poor. At the age of 11 she began to show a distinct personality inversion. Weight 160 pounds, height 59 inches. Mentality sluggish; no pubic or axillary hair; obesity marked with accumulations of fat over shoulders, lower abdomen, hips, and upper thighs; breasts large but composed essentially of adipose tissue. Basal metabolism rate, —14. Roentgen studies of sella turcica and epiphyses of long bones revealed no abnormalities. Obviously, this was a true case of adiposogenital dystrophy.

For one year, treatment consisted of large doses of gonadotropic factors from anterior pituitary and pregnancy urine together with thyroid extract, a restricted diet, and increased exercise, with no apparent improve-

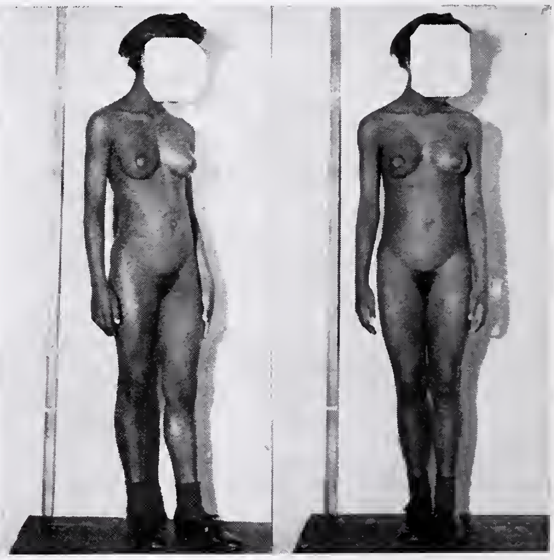

Fig. 7. Case 15, E. G., age 9. Congenital mental retardation and bilateral congenital cataracts. Menses began at age 8. Note marked evidences of precocious sexual development.

ment in symptoms or physical signs. Treatment was changed to gonadotropic factors obtained from pregnant mare's blood, 20 units 3 times weekly for the first 2 weeks out of each 4. The patient has received 3 such courses to date with no apparent improvement. Because of the possible analogy between Cases 5 and 6 and this one, but especially because of the favorable response following the administration of male sex hormone in Case 8, the use of female sex hormone is contemplated in order to determine whether or not clinical improvement will follow. It is possible that sex hormones as such may prove helpful in severe forms of adiposogenital dystrophy.

Retarded Gonadal Development

Patients who show a lack of the usual signs of puberty at the ages of 14 to 16 are encountered commonly. This phenomenon can be explained on the basis of a deficiency in the proper hormonal influences, or a failure of response on the part of the testicles and ovaries to these influences. One is often hard pressed for a decision whether to treat or not to treat. There is no rule which is applicable to all cases. It is to be remembered that once a child so afflicted has reached the age of 14, his chances for normal development without help begin to decrease rapidly. When primary pituitary or gonadal hypofunction is suspected at the age of 14 or 15, the safest policy is to institute therapy. Under such circumstances it is difficult to evaluate the results, but this objection is of secondary importance as compared with the welfare of the patient. Cases illustrating spontaneous recovery as well as therapeutic effect follow:

CASE 10.—S. H., age 16, complained of failure of development of his genitals. As a child he had measles, mumps, scarlet fever, and infantile paralysis. It is noteworthy that this patient led his class in school. Weight 161 pounds, height 70 inches, vertex to pubis 34 inches, pubis to floor 36 inches, span 65 inches. Slight amount of facial and pubic down, but no axillary hair; moderate generalized adiposity, both testicles in scrotum measuring 1 cm. in diameter, penis 3x1 cm. A diagnosis of hypopituitarism was made and treatment was outlined, but the patient failed to return until 8 months later. When seen the second time, he stated that immediately following his first visit he developed an attack of acute appendicitis with perforation and peritonitis. Convalescence was stormy and slow. Examination on this second visit revealed an almost unbelievable transformation in his appearance; he had facial, axillary, and pubic hair in abundance, the penis measured 6x2 cm., testicles 2 cm. in diameter, bodily configuration that of a well-developed male, height 71 inches, weight 163 pounds. Here obviously was a case of retarded puberty with spontaneous recovery. Had treatment been instituted, it is certain that this excellent result would have been attributed to the therapeutic agents employed.

CASE 11.—C. E., age 15, complained of retardation in development of sexual characteristics and failure to menstruate. She had measles, mumps, pertussis, and a tonsillectomy as a child. Breast development was lacking, there was no pubic or axillary hair, and the vulvae were small. Weight 104 pounds, height 57 inches, span 38 inches, crown to pubis 28 inches, pubis to floor 29 inches. There was a moderate excess of fat over the shoulders, chest, lower abdomen, and hips. Adiposogenital dystrophy was the diagnosis, and therapy with gonadotropic factors from pregnancy urine and anterior pituitary together with thyroid extract was started. Injections were made by the mother, the patient being observed at the clinic monthly. Improvement began 2 months after the institution of treatment and continued rapidly thereafter. In exactly one year, at the age of 16, the patient menstruated for the first time, and has continued to do so regularly without further therapy. It is natural to attribute the remarkable development shown by this patient to the intensive hormonal therapy. In view of the poor results in cases of true adiposogenital dystrophy, it is probable that this was not such a case, but rather one of retarded puberty. The development which followed therapy may have occurred spontaneously. However, the patient, her parents, and we feel that therapy at least helped to speed development.

So far deficiencies of gonadotropic and sex hormones have been dealt with. Other glandular deficiencies similarly may be responsible for delay or failure in gonadal development. Perhaps the most striking is the retardation encountered in juvenile myxedema. An instance of response to thyroid therapy follows:

CASE 12.—G. F., age 7, was first seen because of retarded growth. She had chickenpox, and pertussis at 3. Weight 42 pounds, height 39 inches. Facial expression and general appearance suggested juvenile myxedema. For 6½ years, treatment has consisted solely of tolerance doses of thyroid extract. Now, at the age of 13, this girl is practically normal. Her height is 59 inches, weight 97 pounds, and she shows well-marked development of both primary and secondary sex characteristics.

Precocious Gonadal Development

In the management of children, instances of precocious sexual development not due to neoplastic disease of the adrenal cortex, ovary, testicles, or basophilic cells of the pituitary are seen occasionally. These cases may occur following acute infectious disease and congenital or acquired disturbances of the brain. Although in most patients no definite glandular lesion can be demonstrated, there is probably an early appearance of large amounts of gonadotropic hormone. Early development of the sexual characteristics as well as closure of the epiphyses are characteristic of this condition.

CASE 13.—P. W., age 7, a victim of spastic paraplegia due to cerebral birth trauma, showed moderate development of the mammary glands as well as large amounts of pubic and axillary hair. She has been observed for 3 years, and although menstruation has not occurred, the patient shows definite evidences of sex urge and the menses will probably appear before long.

CASE 14.—L. Y., age 10, began to menstruate at the age of 9½ years. She has had 3 distinct menstrual periods in the course of 6 months, but has not been free of bleeding for more than 1 month out of the 6. Her development was equivalent to that of a girl of 16. Investigation revealed no evidence of neoplastic endocrine disease. Roentgen study of the epiphyses of the long bones showed early closure. A biopsy specimen revealed a "Swiss cheese type of endometrium." The hemoglobin was 35 per cent and erythrocytes 1,800,000. She was hospitalized, given 3 transfusions, iron, a diet rich in iron and vitamins, and pregnancy urine hormone, 200 rat units every second day. In 4 weeks the bleeding stopped. She menstruated regularly for 8 months and then had another attack of severe menorrhagia necessitating further endocrine therapy. When last seen she had been menstruating for one year.

Case 15.—E. G., a colored girl of 7, showed congenital mental retardation, bilateral congenital cataracts, a heavy growth of axillary and pubic hair, and moderate mammary gland development. Thorough investigation failed to reveal evidence of a neoplastic endocrine lesion, and an etiologic diagnosis could not be made. The parents refused to consent to exploratory laparotomy. The patient who began to menstruate at 8 has been seen only at infrequent intervals; the precocious sexual development continues.

Summary

Gonadal development has been discussed in its relation to the normal as well as the abnormal. The latter has been divided for convenience into 4 groups and illustrative cases have been cited, together with our findings concerning therapy and management.

The varieties of gonadal derangement which lend themselves most readily to successful treatment are those in which hypofunction exists. Two types of hormonal therapy are available: (1) stimulation with gonadotropic factors derived from the anterior lobe of the pituitary, the urine or blood of pregnant mares, and (2) substitution therapy using androgens or estrogens. Questions arise relative to indications for the use of each of these. Stimulating therapy is of value in stimulating a gonad capable of response. This capacity is manifested by increased activity and an increased output of sex hormone. It finds its most useful application in the treatment of cryptorchidism, adiposogenital dystrophy, or hypopituitarism with secondary hypogonadism, particularly in pubescent and adolescent children. Substitution therapy is of greatest value when the gonad, because of atrophy or destruction, is incapable of responding to gonadotropic stimulation. It is, therefore, most useful in the treatment of eunuchism and eunuchoidism. Male sex hormone is contraindicated whenever the testes are capable of normal function because it may produce a reduction in the number of spermatozoa. For this reason it seems inadvisable to use it in the treatment of cryptorchidism.

The addition of thyroid extract to the treatment of these cases is of definite value, especially where lack of gonadal development is accompanied by obesity.

The authors acknowledge with great pleasure their indebtedness to Parke, Davis & Company for a generous supply of pregnancy urine hormone (antuitrin "S"), to the Schering Corporation for the testosterone in oil (oreton) and in pellets, and to Armour & Company for the anterior pituitary extract used in these studies.

ABSTRACT OF DISCUSSION

Nathan H. Einhorn (Philadelphia): Dr. Rowntree has demonstrated by means of lantern slides just what can be accomplished with endocrine preparations in the control of abnormal gonadal development in children. This has been a factual demonstration, admirably presented. Examples have been shown of congenital deformities, of arrested, retarded, and precocious development. Symptomatology, principles of treatment, and end results have been explained. All of these are evidence of the rapid strides which endocrinology has made.

Although we are able to obtain results undreamed of 10 years ago, the surface of this field has been barely scratched. We can hope for much more, and likewise we can look forward to the time when we may blush with shame at some of the statements made today.

It is necessary to call attention to several points relating to diagnosis. Shortly after the use of pregnancy hormone was first advocated for the treatment of cryptorchidism, it became widely used and numerous articles appeared claiming cures in as high as 75 per cent of the cases treated. There is recorded in the literature an incidence of descent which occurred several hours after a single injection of 100 rat units of pregnancy urine hormone.

At the Philadelphia Institute for Medical Research, 35 cases of cryptorchidism have been treated with pregnancy urine hormone, and only 9 or 29 per cent were benefited thereby. Why should there be such a discrepancy in end results?

I think the answer is to be found in the fact that doctors fail to differentiate pseudocryptorchidism from true cryptorchidism. When these cases of pseudocryptorchidism are differentiated from true cryptorchidism, the good results from endocrine therapy in the latter group will be less numerous. It is not to be inferred that an attempt is being made to belittle the effects of endocrine therapy. As a matter of fact, we feel that unless there are contraindications such as hernia or torsion of the cord, which of themselves necessitate surgery, endocrine therapy deserves a fair trial in every instance.

Another point in diagnosis of particular concern to us as pediatricians is the differentiation of the obesity of puberty and adolescence from the obesity of adiposogenital dystrophy. In the former, spontaneous recovery is frequent or may be facilitated by such simple measures as restriction in food intake, increased exercise, and possibly small amounts of thyroid extract. In the latter, these simple expedients are of little or no avail, and resort must be made to more intensive therapy of a stimulating character.

How can one avoid the mistakes of failing to give adequate treatment to adiposogenital dystrophy and too intensive treatment to the obesity of puberty and adolescence? In the first place, one does not need to rush into treatment until the age of 12 or 13. In the second place, in addition to frequent manifestations of mental and physical sluggishness, cases of adiposogenital dystrophy show a retardation in skeletal development, a disturbance in appearance of hair, and hypogenitalism.

These 3 cardinal features are usually absent in cases of obesity. However, the time element must be kept in mind in attempting to establish a differential diagnosis. Both groups may look alike at 10, but one does not expect hair and large genitals at this age. If one will wait until the age of about 13, or even 14, these differential points become more obvious, and the diagnosis less difficult.

In treating children with endocrine products, the question is frequently raised as to when to use stimulating and when to use replacement therapy. This question has bothered those of us who are in this work just as much as it has those who see an occasional case. I am not sure that we are in a position to give a definite answer.

Several points, however, must be recognized:

1. In order to respond to stimulating therapy, a gonad must be capable of response, and when a testicle or ovary is atrophic, no amount of stimulating therapy will establish normal function, and resort must be made to replacement therapy.

2. Stimulating therapy is of greatest value in hypopituitary states and cryptorchidism, while replacement therapy is indicated in eunuchoidism.

3. Since replacement therapy in the form of sex hormones may do harm, it seems advisable in children at least to use stimulating therapy first; failing in this after a 6 to 12 months' trial period, resort then may be made to replacement.

Disorders in gonadal development are overlooked frequently because they are most apparent between the ages of 12 and 14 when children are orphans in the practice of medicine. To the pediatrician, whose field is limited by the numerical age of 12, these children are verboten; to the internist they are too young to arouse interest. The result is that they become drifters, and are not seen by physicians until it is almost too late to offer them material aid. The pediatrician occupies the position of greatest advantage insofar as treatment of these patients is concerned. It is his job to continue caring for them until they are ushered into normal adolescence by appropriate treatment.

A. M. A. JOURNAL CITES REASONS WHY SUIT INVOLVING MANUFACTURERS IS POORLY CHOSEN BY JUSTICE DEPARTMENT

"In 1923 the governors of the University of Toronto acquired patents to control the manufacture and sale of extract of the pancreas containing the active principle insulin," *The Journal of the American Medical Association* for July 12 says in an editorial. "Subsequently, 4 manufacturers were licensed to make and market this important drug in the United States. At least one other concern entered into negotiations for the right to place the article on the market, but for reasons which are not known it remained out of the business. In 1939 one of the 4 original licensees discontinued manufacturing preparations of insulin, allegedly because the business in this item was no longer profitable under the existing conditions.

"In March, 1941, the Department of Justice charged the 3 manufacturers of insulin in the United States with price-fixing in violation of the Sherman Act. This action was terminated by pleas of *nolo contendere,* and large fines were levied against the concerns and their principal officers. Judging by the text of a proposed license agreement, the price at which insulin was to be sold was subject to the terms of the agreement between the governors of the University of Toronto and the manufacturer. Since the 3 manufacturers were the ones doing business in the United States, the action of the government was of necessity directed against them. But the question may be fairly asked whether the action of the government does not cast its principal reflection elsewhere.

"The insulin committee of the University of Toronto deserves great credit for the task it has performed in controlling the quality and potency of the insulin placed on the market. The price of insulin has steadily declined. In 1925 a 10 c.c., 40 unit vial of insulin sold for $2.40. In 1931 it was $2. At presents it sells for 57 cents. This reduction has been accomplished despite a 60 per cent increase in the cost of glands since 1925.

"The suit which involved 3 of the leading pharmaceutic manufacturers in the United States was perhaps most poorly chosen by the Department of Justice, one reason being that the product concerned is manufactured under a patent held by an educational group in a university outside the United States. Another reason is, of course, the fact that the patent terminates in a short time. A third is that the price of this product, as has already been mentioned, has been brought down to almost the minimum at which such a product can be sold. Finally, the costs of defending such suits are tremendous. Had the firms attempted to defend themselves, and had they attempted to bring out in court the facts here mentioned, they would have had to increase considerably the price of insulin in the United States; this would have worked a hardship on almost a million persons with diabetes.

"Of the patents held by educational groups, that administered by the University of Toronto is the most notable example. The result of the recently terminated action has wide implications as far as educational institutions holding patents are concerned. This is particularly true where the institution attempts to control the use of the patent by licensing agreements. Some schools, including the University of Toronto, have used patents as a source of revenue, the royalties thus accruing being used for various purposes. Recently one of our large universities published an article pointing out the profit-making possibilities of patents and toward this end urged its members to get busy and discover something worth patenting. To this spirit in academic research may be attributed the increasing tendency toward secrecy and isolation, a trend which can be viewed only with alarm. The authority of the University of Toronto over its licensees is so complete that they may dictate even the names of new products related to insulin. The monopoly of a patent carries with it grave public responsibilities. In the scramble for patent rights, it is no profit to a university to gain the whole world and lose its own soul."

ALEUKEMIC LEUKEMIA

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History and Terminology

LEUKEMIA was recognized by both J. H. Bennett and Virchow in 1845. The depth of perception displayed by these investigators in associating enlargement of the spleen with increase in the white cells of the blood is appreciated when one recalls that their publications antedated by 30 years the introduction of methods for counting and differentially staining the white cells. Bennett referred to the blood alteration as "suppuration of the blood"; Virchow called it "white blood." Twenty years later, in 1865, Cohnheim reported, under the name of pseudoleukemia, a case having the clinical and postmortem features of leukemia in which the white corpuscles of the blood showed "no deviation from the normal." In 1870 Neumann recognized the importance of the bone marrow changes in leukemia, and by the end of that decade the technic of the enumeration of the various blood cells had been introduced and was being applied to the blood dyscrasias. During the ensuing 30 years, a number of cases of leukemia having normal or subnormal leukocyte counts were reported under a variety of names so great as to lend confusion to the literature of the entire subject.

The designation "aleukemic leukemia" for this condition is attributed to Orth by H. Hirschfeld and to Pappenheim by H. Baar. The behavior of leukemias could be, according to Türck, either (1) leukemic, (2) subleukemic, or (3) aleukemic, the latter group being the same as Cohnheim's pseudoleukemia. Here we can pause to consider the fate of the word pseudoleukemia. It was soon applied to nonleukemic diseases such as Hodgkin's, in which the clinical picture suggested leukemia (H. Senator). Today, no longer used for leukemia in a specific sense (although O. Naegeli does give it such a generic meaning when he groups under it aleukemic leukemia, leukosarcoma, and certain specific granulomas), pseudoleukemia now designates a variety of blood pictures which, while suggesting leukemia, are found to belong to some other nonleukemic disease.

Following is an incomplete list of names used by various authors in reporting cases of aleukemic leukemia. It shows at a glance the confusion, lack of conformity, and historic evolution of its designations.

Pseudoleukemia	Cohnheim	1865
Anaemica splenica pseudoleucaemia	G. Jawein	1897
Leukanaemia	W. von Leube	1902
	F. G. Bushnell and D. G. Hall	1906
Myeloid pseudoleukemia	H. Hirschfeld	1908
Aleukemic leukemia	Orth	
	Pappenheim	
	Hirschfeld	1914
Aleucocythaemic leukaemia	J. T. King	1917
Leukopenic leukemia	N. Rosenthal and W. Harris	1935
	F. R. Miller and W. B. Seymour	1938
	R. B. Scott	1939
Hypocytic leukemia	R. R. Kracke and H. E. Garver	1935
Subleukemic leukemia	Türck	
	E. E. Osgood	1937
	C. E. Forkner	1937
The I A B Code	V. H. Moon	1939

Hirschfeld, in 1914, after a considerable period of interest in these cases, which he called *aleukemic leukemia,* clearly defined them as clinical variants of regular leukemia in which there was no increase in the number of leukocytes in the blood.

Leukemia (white blood) has long since come to mean the disease in which the leukocyte formative tissue has undergone lawless proliferation. Nevertheless, aleukemic leukemia—white blood without white blood—presents an obvious contradiction. Attempts have been made to escape this paradoxic word combination, one of the first being by King, who called it "aleucocythaemic leukemia," a good name that was never adopted.

During the past 5 years the term aleukemic leukemia has been so tossed about on the sea of

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Read before the Section on Clinical Laboratory Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

medical literature that it is no longer sure of its cargo. Its original connotation (Hirschfeld) of a leukemia in which the leukocyte count is not above normal is still maintained by many, including the able hematologist, A. Piney. Another large group, numbering Kracke, Forkner, and Osgood, follow R. H. Jaffé's thought that "aleukemic" should be reserved for those cases which, in addition, never show a diagnostically significant number of immature cells in the blood. These cases are rare.

Not since Hirschfeld's studies has the occurrence of aleukemic leukemia posed as a problem to the systematist in its relation to leukemic leukemia, for they are recognized as being fundamentally the same disease. The phases of leukemia can be summarized in this way: Leukemia usually has a leukocyte count over 50,000, often over 100,000, and occasionally as high as 1,000,000 (open or leukemic). Any type of leukemia can present a phase in which the white cell count is not above normal limit of 12,000. When, in addition, immature cells do not appear in the blood smear, then the disease can unquestionably be characterized specifically as "aleukemic." When immature white cells are found in the smear in significant numbers, then the state can be called "subleukemic" as is suggested by Forkner and by Osgood. These aleukemic phases are most frequently encountered at the onset of the acute form of the disease; they may persist for a long time, even throughout the entirety of the case, or be only temporary, which is more usual. They can also occur during the natural course of the disease, or as a result of treatment (roentgen, benzol, transfusions).

Despite any future change in the exact meaning of these terms, they will remain in some form because of their clinical significance. Open leukemia, when met with, is easily placed in a clinical pigeonhole. Aleukemic and subleukemic cases are as a group distinctly difficult to diagnose with rapidity and accuracy. Retention of these names has a pedagogic advantage, for they keep the concept for which they stand in the mind of the clinician and laboratory worker. After all, whether a case is diagnosed as aleukemic, subleukemic, or simply leukemic depends in a great degree on the length of time the case can be observed. Many cases, first seen in the aleukemic or subleukemic phase, will ultimately be diagnosable as leukemia from study of the peripheral blood. With this in mind, and considering that clinical diagnosis is the important reason for recognizing the aleukemic phases, we feel that it is permissible to use aleukemic leukemia in a generic sense to embrace all of these manifestations.

Case Reports and Discussions

At the Hahnemann Hospital, during the 5-year period from June, 1935, to June, 1940, there have been recorded 42 cases of leukemia. These were reviewed to determine the number of cases having an initial aleukemic or subleukemic phase. There were, in all, 9 such cases, distributed among the various types of leukemia as shown in Table I.

TABLE I

Type	*Total No. of Cases*	*Having Definite Initial Aleukemic Phase*
Acute lymphatic ..	13	7
Chronic lymphatic .	11	1
Acute myeloid	5	0
Chronic myeloid ..	11	0
Acute monocytic ..	2	1 (subleukemic)
	42	9

The diagnosis as to acute or chronic in this table has been based not only on the blood picture—a high percentage of immature cells—but also on the clinical features and course. When only the totals are considered, the incidence is about 1 in 5, but the figures are much more significant when considered type for type.

The aleukemic phase occurs most frequently in acute leukemia; here it was encountered in practically one-half of the cases of acute lymphatic leukemia. No case of aleukemic myeloid leukemia was recorded, but we suspect that one of the cases reported subsequently (Case 4) might fall in this group. Considering some large groups of leukemias that have been reported (Rosenthal and Harris, 455 cases; C. W. Baldridge and W. M. Fowler, 229 cases), our series is far too small to yield valuable incidence figures. The salient features of these cases and a few illustrative blood counts are given in the following case reports and tables:

Case Reports

CASE 1.—V. E., age 13, female. When this girl became anemic following the appearance of menstruation, she was thought to have chlorosis. The supervention of weakness, headache, and finally a sore throat, led to her admission to the hospital, 3 months later, for diagnostic study and for treatment. The initial count showed a severe anemia with a color index of 1.1, and a leukopenia with a granulopenia; the spleen was markedly enlarged. After a week, in which transfusions and hematinics were given, the granulopenia was alarmingly worse, and therapy appropriate for agranulocytosis was instituted, 13 injections of leukocytic cream being given. A sternal puncture study, made 2 weeks after admission, contained an excessive number of blast

TABLE II

SELECTED HEMOGRAMS OF CASE 1, V. E.

Date	*Hemoglobin*	*Red Blood Cells*	*White Blood Cells*	*Myeloblasts*	*Myelocytes*	*Polymorphonuclears*	*Lymphoblasts*	*Lymphocytes*	*Monocytes*	*Nucleated Red Cells*
(1935)										
Sept. 20	5.9	1.82	3,900	...	...	19	...	79	2	...
Sept. 25	8.7	1.92	2,000	...	...	8	...	90	2	...
Oct. 2	*Sternal puncture*			*21?*	*23*	*18*	...	*22*	...	*14*
Nov. 12	...	4.12	50,000	...	1	6	82	10	1	...
Dec. 3	11.1	3.61	350	...	4	12	8	76	...	...
(1936)										
Mar. 3	7.9	2.73	900	...	...	2	...	97	1	...
Mar. 27	12.5	3.99	62,600	...	1	3	79	17	...	...

cells, at that time considered myeloblasts (21 per cent), and many lymphocytes (22 per cent), but agranulocytosis was still considered as the best diagnosis until, 20 weeks after the onset of anemia, she developed simultaneously superficial and mediastinal lymph node enlargement and a leukemic blood picture, with a white count of 50,000, immature lymphocytes 82 per cent. Previous to this, blast cells had never been seen in the smear, although they had been looked for diligently.

The leukemic phase lasted 3 weeks and was followed by extreme depression of the white count (once only 350), but at least a small number of immature lymphocytes remained in the blood. Discharge was permitted 25 weeks after admission, in a state of general improvement and an almost normal hemoglobin (12.5) and red cell count (4,050,000), due to the repeated transfusions given (17 in all). During her hospital stay she had exhibited a cyclic febrile course, suggesting the Pel-Ebstein type, with crescendo-decrescendo fever periods of 10, 10, and 25 days with two 19-day intervening afebrile periods.

After 2 months of a tolerable extramural existence she returned to the hospital with a painful stomatitis. The white count, normal on return, dropped so low (800) with a severe granulopenia (once only 1 per cent) that, again with the thought of malignant neutropenia, experimental intra-abdominal transfusions were given. During this time no blast cells in the smear were recorded. After 22 days the count rose, going to leukemic levels with an abundance of immature lymphocyte series cells present.

TABLE III

SELECTED HEMOGRAMS OF CASE 2, D. L.

Date (1936)	*Hemoglobin*	*Red Blood Cells*	*White Blood Cells*	*Myelocytes*	*Polymorphonuclears*	*Lymphoblasts*	*Prolymphocytes*	*Lymphocytes*
Jan. 14	12.8	3.91	4,800	...	...	...	...	...
June 6	6.6	1.86	28,500	...	8.5	80.5	...	11.0
June 18	16.5	5.53	10,000	...	15.5	74.0	...	10.5
Dec. 14	...	...	207,500	2	4.0	66.0	11	16.0

In review, we can see that full confidence was not placed in the early sternal marrow study, and agranulocytosis recurrently engaged the attention of all who saw this patient.

CASE 2.—D. L., age 27, female. Because of loss of weight, this patient was admitted to the hospital for metabolic studies which were essentially negative. The white count was 4800; a differential count unfortunately was not made. Small insulin doses slowly improved her weight for 4 months, when a sore mouth developed (nonulcerative gingivitis). One month later the diagnosis of acute leukemia was made when the white blood cells were 28,500 with 80.5 per cent lymphoblasts and 11.0 per cent lymphocytes. Following 5 full transfusions, a subleukemic state supervened and continued for over 5 months, the lowest white count being 2700. Ulcerative stomatitis and vaginal bleeding developed during this period of subleukemia. One month before her death the blood once more became leukemic, rising to 207,500.

CASE 3.—R. H., age 4, male. Cough and fever brought this boy in for study. A blood count was: Hemoglobin 7.31, red blood cells 2,250,000, white blood cells 2200, polymorphonuclears 30 per cent, lymphocytes 68 per cent, no lymphoblasts, monocytes 2 per cent. The anemia found was thought to be nutritional, but a suspicion of aplastic anemia or leukemia led to further

TABLE IV

SELECTED HEMOGRAMS OF CASE 3, R. H.

Date (1939)	*Hemoglobin*	*Red Blood Cells*	*White Blood Cells*	*Polymorphonuclears*	*Lymphocytes*	*Monocytes*
Apr. 9	7.31	2.25	2,200	30	68	2
May 1	7.0	2.97	1,600	4	96	...
June 23	10.4	3.01	2,100	1	98	1

TABLE V

SELECTED HEMOGRAMS OF CASE 4, L. M.

Date (1939)	Hemoglobin	Red Blood Cells	White Blood Cells	Myelocytes	Polymorphonuclears	Lymphoblasts	Prolymphocytes	Lymphocytes	Monocytes	Nucleated Red Cells
June 21	4.2	1.46	10,600	...	30	...	...	65	5	...
June 26	*Sternal puncture*			*1.0*	*0.1*	*1.2*	*90.0*	*0.5*	...	*6.9*
July 13	5.2	2.01	2,600	...	12	...	87	...	1	...
July 21	3.1	1.04	40,000	...	16	...	82	...	2	...
July 22	...	...	63,300	...	...	...	...	...	...	...

study. Four weeks later the diagnosis of aleukemic lymphatic leukemia was made by sternal marrow examination which showed 98 per cent lymphatic cells. Leukopenia with lymphocytosis of 96 per cent (without lymphoblasts) was constant; the entire course was aleukemic until his death 12 weeks later.

CASE 4.—L. M., age 59, male. The patient, an Italian, complained of progressive weakness and loss of weight for 4 months. Aleukemic leukemia was the initial suspicion, due to the enlarged spleen, severe anemia, and lymphocytosis of 65 per cent (white blood cells 10,600). This was confirmed by marrow study revealing 92 per cent lymphatic series cells. The blood picture remained aleukemic for one month, showing leukemic features only in the 3 days before death when the white count reached 63,300.

Case 5.—L. L., age 8, female. This patient was operated upon for an acute osteomyelitis, the presence of which was confirmed, and it yielded a pneumococcus. Before operation she had a marked anemia, with leukopenia (3600) and granulopenia (16 per cent). The routine blood counts done by the intern contained no immature white cells. (One cannot but wonder whether the few monocytes reported were blast cells.) She was discharged from the orthopedic service when her wound was better, 6 days after admission, despite an aggravation in the blood features. Abdominal pain with nausea brought about a readmission to the pediatric service. Although the physical features suggested leukemia, a positive diagnosis could not be made from peripheral blood studies (white blood cells 2700, lymphocytes 89 per cent, no lymphoblasts), but was confirmed by sternal puncture marrow examination.

TABLE VI

SELECTED HEMOGRAMS OF CASE 5, L. L.

Date (1939)	Hemoglobin	Red Blood Cells	White Blood Cells	Polymorphonuclears	Lymphocytes	Monocytes
May 20	5.7	2.10	3,600	16	83	1
May 24	8.0	2.52	1,500	12	83	5
June 27	...	...	2,700	9	89	2
July 27	13.9	4.49	2,000	10	88	2
July 29	*Sternal puncture—numerous lymphatic series cells*					

CASE 6.—P. B., age 3, male. This child was brought to the hospital because of the mother's observation of inguinal adenopathy. He had the clinical features of aleukemic leukemia—a white count of 7300 with 75 per cent of lymphocytes, and a severe anemia (hemoglobin 4.8, red blood cells 1,710,000). The diagnosis remains unconfirmed, as the parents refused sternal puncture and further study.

CASE 7.—D. J., age 33, female. This patient had a blood count done as a "routine" measure on the advice of her family physician before undergoing extensive dental treatment for recurring Vincent's angina. It disclosed a severe hyperchromic anemia, a white count of 12,900 with 66 per cent of monocytes—a surprise in view of the absence of any subjective symptoms. A sternal puncture smear contained 5.5 per cent monoblasts, 60.5 per cent promonocytes, and 6.0 per cent monocytes, confirming the diagnosis of monocytic leukemia. The majority of the white cells of the blood were motile and stained supravitally as monocytic series cells.

For the 2 months from the first count to the last week of illness, the counts were frequently subleukemic, 20 white cell determinations averaging only 17,400. Preagonally, the white count rose to 49,000.

CASE 8.—H. J., age 52, female. At first diagnosed as pernicious anemia, because of hemoglobin 3.4 and red blood cells 1,030,000, this case exhibited such a granulocyte depression that leukemia was suspected, although the blood was aleukemic (3600) for 10 days. After sternal puncture made the diagnosis by observation of the lymphocytosis of the marrow, 4 per cent lymphoblasts were found in the blood smear. While the patient was subleukemic during the entire subsequent 5 months, this can be accounted for by the x-ray and transfusion therapy.

CASE 9.—F. C., age 10, male. A well-developed, pleasant boy, previously healthy and active, became languid and easily fatigued about 3 weeks before admission, and a noticeable pallor developed. He continued his usual activities until 4 days before hospitalization when he became dizzy and collapsed. Orthostatic vertigo continued and was accompanied by fever, a slight sore throat, and profound weakness.

When received in the hospital on Nov. 5, 1936, he had a fever of 105 F. and was extremely pale. There

TABLE VII

SELECTED HEMOGRAMS OF CASE 7, D. J.

Date (1940)	*Hemoglobin*	*Red Blood Cells*	*White Blood Cells*	*Myelocytes*	*Polymorphonuclears*	*Lymphocytes*	*Monoblasts*	*Promonocytes*	*Monocytes*	*Nucleated Red Cells*
Jan. 11	11.8	2.40	12,900	1	5	20	1	7	66	+
Jan. 13	*Sternal puncture*			*8*	*6*	. . .	*5.5*	*60.5*	*6*	*14*
Feb. 9	12.7	3.59	13,300	2	6	5	1	5	81	. . .
Mar. 22	7.0	2.34	43,000	1	2	2	1	4	90	. . .

were no oral ulcerations, the tonsils were hypertrophic and hyperemic, and the upper cervical lymph nodes only were enlarged. A double mitral (? rheumatic) murmur could be heard as well as a hemic one. The liver was of normal size, the spleen not palpable. A tentative diagnostic thought of subacute bacterial endocarditis was entertained. The blood count showed a grave anemia (hemoglobin 4.29, red blood cells 1.06) with a leukopenia and neutropenia, white blood cells 1900, polymorphonuclears 13 per cent. A provisional diagnosis of aplastic anemia was then made. Transfusion and pentnucleotide therapy was instituted (see Table IX).

Two days after admission, hemolytic streptococci were found in the blood culture. The white and polynuclear counts were very low, white blood cells 700, polymorphonuclears 3 per cent; reticulocytes were absent, and the platelets were down to the bleeding level, 38,800. The next 2 days saw the patient in an alarming semicomatose state, with subcutaneous petechiae, bleeding from the gingivae, and uncontrolled movements. Repetition of the blood culture confirmed a hemolytic streptococcic septicemia, and active prontosil therapy was added to the transfusions. All subsequent blood cultures were sterile. After a stormy 6 days the fever abated. On the fourteenth hospital day his temperature was normal. Recovery was rapid. The ninth transfusion brought the hemoglobin (13.6) and red cell count (4.47) to normal.

The patient was sent home on Nov. 24, 1936, 19 days after admission, appearing quite well, but the blood still showed granulopenia (40 per cent) and leukopenia (2500) with a relative lymphocytosis (42 per cent), some prolymphocytes (9 per cent), but no definite blast cells, and no reticulocytes were present. The final diagnosis at that time was aplastic anemia with hemolytic streptococcus septicemia. Recovery from the latter was attributed to prontosil and transfusions. In view of the abnormal blood findings, final judgment on the aplastic anemia feature had to be suspended.

TABLE VIII

SELECTED HEMOGRAMS OF CASE 8, H. J.

Date	*Hemoglobin*	*Red Blood Cells*	*White Blood Cells*	*Polymorphonuclears*	*Lymphoblasts*	*Prolymphocytes*	*Lymphocytes*	*Monocytes*
(1939)								
Oct. 24	3.4	1.03	3,600	16	. . .	. . .	83	1
Nov. 3	4.3	1.60	3,700	8	4	. . .	85	3
(1940)								
Feb. 26	6.1	1.98	1,900	8	1	7	84	. . .
Mar. 30	10.4	3.36	10,900	5	3	6	86	. . .

Almost a month later he returned to the hospital for a tonsillectomy. At this time his blood could be interpreted as normal; lymphocytes, all mature, were 33 per cent, reticulocytes 0.5 per cent (white blood cells 4100). Several subsequent blood counts at monthly intervals showed a moderate lymphocytosis, 35 to 51 per cent, with no blast cells. Persistence of the lymphocytosis engendered a suspicion that the end of the illness had not yet been seen. For 3 months he was removed from medical care.

When next I saw the boy for a single visit, he was in bed with a high fever, ulcerative stomatitis, a diffuse cellulitis of the left malar region, subcutaneous petechiae, lymphadenopathy, and enlarged liver and spleen. The blood picture, white blood cells 19,100, with 53 per cent lymphoblasts, justified the diagnosis of lymphatic leukemia. Five days later, on Apr. 23, 1937, an autopsy was performed. There were a few petechiae over the body and legs and generalized lymphadenopathy. The liver, spleen, and kidneys were enlarged, and there were small mucosal hemorrhages throughout the small intestine. Lymphatic leukemic infiltration, made up of mononuclear elements of varying sizes and stages, was present in the heart, lung, spleen, small intestine, liver, pancreas, kidney, and bone marrow.

The first period of illness in this case was quite similar to many cases of aplastic anemia in childhood, almost completely matching a textbook picture of that disease (Kracke), and that diagnosis would have been made had he died during this period. (Would autopsy at that time have disclosed leukemic infiltrations, as in the cases reported by Baar and by J. Abt?) We feel that survival through this first period of anemia, pancytopenia, and septicemia was due to the prontosil and transfusion therapy. The case was therefore permitted to complete its natural evolution, terminating as an acute leukemia.

In the light of what we know today, the rapidly developing, grave anemia with a marked leukopenia with prolymphocytes should have suggested aleukemic leukemia, despite the absence of blast cells from the blood smear. A sternal marrow study should have been made; it was the only possible way to make a correct diagnosis

TABLE IX

HEMATOLOGIC AND CLINICAL FEATURES OF CASE 9, F. C.

Date (1936)	*Maximum Temperature (F.)*	*Hemoglobin (Gm.)*	*Red Cell Count (In Millions)*	*Reticulocyte Count*	*White Cell Count*	*Polymorphonuclears*	*Prolymphocytes*	*Lymphocytes*	*Monocytes*	*Platelet Count (In Thousands)*	*Blood Culture*	*Transfusions (Each 250 c.c.)*	*Pentnucleotide*	*Prontosil (c.c.)*
Nov. 5	105.0	4.29	1.06	...	1900	...	...	...	...	...	+	+	...	...
Nov. 6	106.0	5.75	1.62	0.0	800	13	...	86	1	...	+	++	20	40
Nov. 7	103.4	6.35	2.16	...	700	3	...	94	3	39	...	+	...	...
Nov. 8	106.4	9.6	2.47	0.0	1000	2	2	91	5	...	+	+	10	40
Nov. 9	104.4	9.98	3.04	0.0	900	3	2	91	4	...	...	...	...	60
Nov. 10	104.4	8.65	2.64	...	1000	1	...	93	6	21	...	+	...	60
Nov. 11	103.2	9.05	3.26	0.0	1200	3	1	90	6	...	...	...	...	60
Nov. 12	103.8	9.0	3.30	...	1000	15	18	62	5	17	0	+	...	60
Nov. 13	102.4	9.57	3.19	...	800	36	7	53	4	...	...	...	...	60
Nov. 14	102.6	9.8	3.54	...	1000	34	5	55	6	...	...	...	...	30
Nov. 15	100.8	8.4	2.65	...	1600	38	7	48	7	16	...	...	...	20
Nov. 17	100.6	9.35	3.00	...	1200	47	2	44	6	...	0	...	...	20
Nov. 19	98.0	11.5	3.88	...	1600	31	5	55	8	...	...	++	...	...
Nov. 24	98.2	13.6	4.47	0.0	2500	40	9	42	8	147	...	+	...	...
Discharge from hospital														
Dec. 17	98.2	13.6	4.21	0.5	4100	58	...	33	8	463	...	...	...	...

in the first "aplastic anemia" period. The reports of Baar, Abt, O. Herz, F. P. Weber, J. V. Cooke, and R. Monfort point out that cases of aleukemic leukemia are frequently mistaken for aplastic anemia. While too much cannot be deduced from this single case, it adds to the growing suspicion, already voiced in several works on hematology, such as Naegeli's, that primary aplastic anemia, as a disease entity, practically never occurs. Aplastic anemia is a peripheral hematologic syndrome due to a host of toxic agents (benzene, arsphenamine, radium radiation, sepsis), to marrow replacement (osteosclerosis, tumors), and to primary blood diseases (pernicious anemia, leukemia). This case illustrates aplastic anemia as the onset phase of aleukemic lymphatic leukemia.

Discussion of the Entire Group of Cases

Several features of this small group of cases can be examined in discussing the clinical diagnostic problems that they presented. Five of the 9 cases occurred during childhood. Five were females and 4 were males.

There was considerable variation in the complaints that originally brought these people for medical aid. They were weakness (2), loss of weight (2), gingivitis, painful throat, inguinal lymphadenopathy, cough and fever, vertigo and fever, pain in leg. Only one patient sought medical advice because of involvement of the oral mucous membrane. Two cases had chief complaints that are not ordinarially associated with blood diseases, Case 3 with cough, and Case 5 had pain in the right leg which was caused by an intercurrent osteomyelitis.

When all the symptoms and signs elicited on first examination are tabulated, they suggest much more the diseases that they heralded. Weakness was complained of by 4 patients, fever by 3, anemic pallor noticeable to them or their family was present 5 times, 3 had some nonspecific type of abdominal pain, and headache, seldom thought of as a symptom of leukemia, was present early in 3 cases. Splenic enlargement was observed in 4 cases, localized lymph node enlargement in two. The most consistent physical sign observed on the first examination was anemic pallor, seen in 6 cases.

In such problem cases in medicine it is always of interest to see what provisional diagnosis was made after the first few days of observation. In 3 cases the provisional diagnosis was subsequently substantiated. In 5 cases some other blood disease was suspected—pernicious anemia, aplastic anemia, nutritional anemia, anemia unspecified, and agranulocytosis. The diagnosis of the intercurrent osteomyelitis in Case 5 was justified, but not until the case was discharged by the orthopedic surgeons into the hands of the pediatricians because abdominal pain was the underlying disease suspected.

Varied and peculiar onset features, such as arthritis (H. Jackson, Jr.), kidney tumor (J. Foged), and Mikulicz's disease (Hannema), have been reported. To judge from published reports, aleukemic cases with blood pictures suggesting aplastic anemia (see above), agranulocytosis (Osgood, Kracke), and pernicious anemia (A. S. Rubnitz, J. F. Touw and C. A. Graafland) are most frequently misdiagnosed. Agranulocytosis in its early stages is not accompanied by severe anemia, which is only a late manifestation; the platelet count is usually normal, and blast cells do not appear in the blood. Difficulties are apt to be met in differentiating this disease from aleukemic leukemia on the basis of marrow study, as was recently emphasized by G. Voth. T. Fitz-Hugh, Jr., and E. B. Krumbhaar have reviewed the reported various features of the marrow in agranulocytosis and emphasize the myeloid cell hyperplasia with arrest of maturation at the myeloblast level (P. Reznikoff); Kracke's experience is that either aplastic or hyperplastic marrow can be present. Careful examination of the blood, with aleukemic leukemia in mind, will serve to differentiate many of these, and should reveal all subleukemic cases. Undoubtedly, as in our Case 9, young forms of lymphocytes may not be given the consideration they deserve when blast cells are not present. Immature cells of the lymphatic series are difficult to recognize, and it is hardly fair to place the responsibility for so doing on the shoulders of interns or even technicians. A problem case deserves having the blood smear studied by a pathologist.

The introduction of sternal marrow puncture by M. I. Arinkin and the perfection of its technic by R. H. Young and E. E. Osgood, C. Reich, and others has placed in our hands the most valuable means of early diagnosis of aleukemic states. Only by a direct study of the hemopoietic organ can the nature of the disease be disclosed, so the value of bone marrow studies cannot be overemphasized. Particularly those cases simulating aplastic and pernicious anemia can be revealed in their true light. Every case of rapidly developing anemia, with leukopenia and granulopenia, should be subjected to a sternal marrow study. Lymphocytosis of the bone marrow is diagnostic of lymphatic leukemia (M. C. G. Israels, M. Hynes). Splenic puncture is still advocated by some (A. Forconi), but for the most part it has been abandoned in investigating these cases. Forkner recommends x-ray examination of the skull, pelvis, and femur for multiple erosions in aleukemic leukemia.

When the cases in our group were first examined, 8 were in the aleukemic phase and one was subleukemic. Early diagnosis was made by peripheral blood studies in one instance, by sternal marrow study in 4 cases, and once by a combination of these two methods. In 3 cases the final diagnosis was made only after a relatively long clinical course had revealed a leukemic phase; sternal marrow studies would probably have permitted a correct diagnosis much earlier in their clinical course.

Conclusion and Summary

Many cases of leukemia, especially the acute lymphatic variety, present themselves in an aleukemic or subleukemic phase. Correct diagnosis is made by (1) a familiarity with the protean clinical aspects of the disease that makes one expectant, (2) careful blood smear studies and observation of the entire blood picture, and (3) an appreciation of the value of sternal marrow examination.

The history and terminology of aleukemic leukemia are reviewed.

The cases of this disease seen at the Hahnemann Hospital during the past 5 years are studied and used to illustrate the various features of the aleukemic diagnostic problem. One case in particular exhibits an onset picture of aplastic anemia.

For the kind permission to report their personal cases, the author wishes to thank Dr. Samuel W. Sappington (Case 2), and Dr. Grant O. Favorite (Case 3).

ABSTRACT OF DISCUSSION

Samuel W. Sappington (Philadelphia): As Dr. Fisher has indicated, we have known of leukemia about 100 years. We have learned a lot about it in that time, that is, everything except its cause, cure, and prevention. We have certainly learned what aleukemic leukemia seems to be.

I was always under the impression that the aleukemic phase of leukemia was found largely in the acute forms, and I think 8 out of 9 of Dr. Fisher's cases were of these types. However, Rosenthal and Harris, in reporting 455 cases of leukemia, found that about two-thirds of their cases were of the myeloid types, and of these, a majority of the aleukemic cases were of the chronic form. This brings up the question of just what should be considered real aleukemic leukemia. Therapeutic measures, such as radiation, benzole, or arsenic, may, in the chronic leukemias, reduce the leukocyte count markedly, often to leukopenia. Some may not want to class these cases as real aleukemic leukemia, reserving that term for those forms which seem to present, spontaneously or during their natural course, this phenomenon. Such a view would leave most of the cases of aleukemic leukemia among the acute forms.

Incidentally, for many years the idea has been generally accepted that infections during a leukemia reduce the leukocyte count markedly, even to a leukopenia. This viewpoint is still mentioned by Forkner and by Downey, but Wintrobe, in a recent paper reviewing the effect of intercurrent infections upon leukemia, states that in his experience there was not this reduction and he cites particularly 7 cases of lobar pneumonia, a disease supposed to have this effect notably.

The division into aleukemic and subleukemic varieties on the basis of the absence or presence of immature forms of leukocytes may be questioned, because the careful study of blood films by an expert hematologist is likely to reveal immature forms in nearly all cases, especially when citrated, centrifuged blood is used to obtain a concentrated leukocytic layer. And, of course, the diagnosis need not depend on this with sternal puncture available. There is probably no instance in which the diagnostic results of marrow puncture are more satisfactory than in these cases of aleukemic leukemia unless it is in the seldom seen cases of untreated pernicious anemia.

Dr. Fisher has called attention to the frequency of the aleukemic phase of leukemia in the beginning of the acute form, but protracted remission may occur during the course of the disease and lengthen the duration of the acute type. Remissions of 5 months or over are not uncommon as in one of Dr. Fisher's cases and one cited by Jackson. It has been our experience that multiple blood transfusions in acute leukemia may bring about this aleukemic stage.

Finally, the leukocytic elasticity as seen in the rebound of some of these cases from leukopenia to leukocytosis is remarkable. I have seen at least several cases in which the upswing of leukocytes in 24 hours was 100,000 per cu. mm., which amounts in the entire blood volume to the astonishing number of 500 billion leukocytes or more.

Richard P. Custer (Philadelphia): There is one thing that surprised me a bit in Dr. Fisher's presentation of the symptoms which the patients complained of on admission to the hospital. None of his patients presented hemorrhagic phenomena, and none had symptoms referable to the central nervous system. In our series those two features cropped up with considerable frequency, and in one case that I recall the patient had had a balanced palsy of the central type some 4 months before the onset of the clinically recognizable leukemia, which at autopsy was found to be due to metaplastic lesions in the brain proper.

Dr. Fisher (in closing): It is certainly true, as Dr. Sappington has suggested, that complete aleukemic leukemia is probably a very rare disease, but, after all, the important thing is the clinical problem presented rather than a strictly scientific tabulation or classification of the case. We know that these cases are all essentially leukemias. It is the clinical problem presented to both the clinician and the practical hematologist which has guided us in attempting to classify these cases, and I am quite sure—I know at least in one case—if an experienced hematologist had seen the early blood smears rather than interns and technicians, a diagnosis other than aleukemic leukemia might have been made.

With reference to Dr. Custer's discussion of the symptoms of onset, we had only one case in which petechiae were seen at the very first visit to the doctor or to the hospital. In 2 cases we did see paralytic phenomena in the course of the disease; the case of monocytic leukemia developed a paralysis of the auditory branch of the eighth, and then subsequently of the fifth cranial nerve.

WARNING AGAINST A DANGEROUS "REMEDY" FOR APPENDICITIS

Authorities in Ohio, and probably by this time federal authorities, are making an investigation of the sale in this state of an alleged appendicitis "remedy" being sold by one W. O. DeBerry of Wilmot, R.F.D., Stark County, who uses Beach City, Stark County, as his mailing address.

DeBerry calls his stuff "Non-Cut Appendicitis Remedy" and, surprisingly enough, he has built up quite a market in Eastern Ohio. It sells for $10 for 4 ounces. One would think that the price alone would be enough to create sales resistance, but apparently this is not the case. Even after laying 10 bucks on the line and getting a bottle of this valuable fluid, one would expect the purchaser to get rid of it in a hurry after reading the label. But, this has not been the case, judging by some of the unhappy experiences of those who have used the "remedy."

Believe it or not, here are the instructions issued to each purchaser of "Non-Cut":

"We do not diagnose, but after some reliable Doctor has told you that you have Appendicitis, send at once for Non-Cut Appendicitis Remedy, and when it arrives, thoroughly bathe the affected part with hot cloths to open up the pores, then dry the part well and apply Non-Cut liberally by rubbing affected part gently with palm of the hand, continuing to apply Non-Cut liberally till relief is obtained, then apply only every hour for a few hours. Castor Oil, or some other gentle laxative should be taken freely for day or two to keep bowls (sic) open."

Certainly a stop should be put to the sale of this worthless nostrum with its label containing advice which is a real menace to the health and life of anyone gullible enough to heed it. The State Medical Association is pressing for an investigation, which it is hoped will end this travesty. In the meantime, physicians should warn their patients not only against this but other crack-pot "remedies" for appendicitis. The public cannot be told too often to beware of worthless medicines and unorthodox advice on health matters.—*The Ohio State Medical Journal.*

NO NEW DEAL THANKSGIVING

In announcing that Thanksgiving Day next year would be on the last Thursday in November, as for many years was customary, President Roosevelt explains that the earlier Thanksgiving, which he decreed 2 or 3 times, did not work out for business as well as retail interests thought it would. The extra week added to the so-called Christmas selling season did not increase retail volume; in fact, it was a detriment.

There is no new principle involved here, and the President's act is not at all surprising; advertisers had not the least doubt that he would reach this conclusion if he took time to think the thing through—which he has now done.

The big feature of the story, however, is that the President quizzically admits that he was entirely wrong about the Thanksgiving affair. In accepting the retailers' idea without careful examination he concedes that he made a mistake. Thus is another precedent broken. And now that the President has seen and demonstrated how easy and practical it is to recant, perhaps we shall have some more of the same.—*Printer's Ink.*

The Pediatric Approach in the Prevention of Behavior Problems

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EXPERIENCE has taught us that the period of growth from infancy through adolescence is not only productive of various frank disturbances in the field of behavior but that in these disturbances and in other less clearly demonstrated experiences of childhood are laid the foundations of later health or lack of health in the personality field.

This presents a constant challenge both to parents and to physicians whose major interest pertains to children's health.

The challenge to the parent is that of seeking more specific help from the pediatrician, instead of closing eyes to problems of behavior, or attacking these by trial and error methods, or relying upon the educational system to provide the desired results.

The challenge to the pediatrician is that he no longer limit himself to the physical aspects of health, the prescribing of diets, immunization from the infectious diseases, and the treatment of acute disorders, but that he familiarize himself with the important fundamental psychologic needs of childhood, the developmental process of the child in the emotional field, and learn to recognize the early deviations from normal and what to do about them.

The psychiatrist entered the field of child guidance for two reasons. One of these reasons was that he had discovered that many of the mental disorders of adult life had their foundations laid during childhood, and that the sooner unfortunate habit formation was recognized and corrected, the less involved treatment would become, and the better the results which might be expected. The other reason was that the pediatrician, recognizing the great part played by emotional factors in delinquency and many of the minor childhood problems, was appreciative of the help that the psychiatrist might give in solving these problems.

Parents and physicians in the past had delegated too much responsibility during the school years to the educational system. Pediatrician and psychiatrist, working together, have learned that the physician who familiarizes himself with the sequence of events that occur in the developing personality should be more able than the educator to foresee and forestall behavior difficulties, because he, the physician, is already acquainted with both the family relationships and the physical health of the child.

Education of the parents to the child's emotional needs may actually prevent even the appearance of unhealthy habit reactions. This then points out a field of public health and preventive medicine in which the services of the pediatrician should be pre-eminent.

The field of the pediatrician and his procedure in the prevention of behavior problems may be illustrated by the program which has been developed in the Department of Preventive Medicine at St. Christopher's Hospital.

When a new family seeks the hospital service, opportunity is sought, whenever possible, either by the physicians or through the social service interview, to make inquiry about the child's habits and personality development, and similar inquiries are also made about other children in the family. Inquiry is directed particularly toward the preschool child where prevention can be the keynote. The possibilities of understanding and guiding the child's development are explained to the parent, and the facilities of the Department of Preventive Medicine are presented.

These facilities include interviews for mother and child with the pediatrician, case work by the Social Service, a diagnostic play group for children of preschool age, a mother's study group, and frequent parent meetings. There is also a class for speech training, and consultations are available when desired with psychologist and psychiatrist.

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The personnel carrying out this program are those in the Department of Preventive Medicine, the medical director of the department, supervisor of the department, the resident physicians, and physicians of the outpatient department, social workers, and nurses. Psychologist and psychiatrist function solely as consultants.

The duties of the supervisor of the department are to correlate the activities of the department as they pertain to the needs of parent and child, to follow the recommendations of the physicians in directing the work of social service and nursing staff, and to supervise the children's play group, the mothers' study group, and the parents' meetings.

The play group is both diagnostic and therapeutic. It provides opportunity for observation of the child while he is acting out his own problems. The mothers have the advantage of observing their children with the group. The lessons learned here may be taken up with the mother either individually or impersonally in the mothers' study group. This latter group is both educational and therapeutic in its scope. The parents' meetings, scheduled on a monthly basis are educational and social in nature. These are addressed by staff members or outsiders and at least one meeting each year is planned to deal with behavior and personality development.

The service so far described has been entirely that of the pediatrician to the child. The psychiatrist is available for frequent consultation and case reviews. The psychologist provides valuable information as to the child's capacity at the intellectual level. He is able also to point out specific school disabilities. The speech-training class, outgrowth of the psychiatric clinic, perhaps more properly belongs directly in the Department of Preventive Medicine.

The department also utilizes the services of various outside agencies—social agencies, boys' clubs, scout organizations, and the Department of Psychology of the Board of Education. The social worker is often able to interpret the child's need directly to the school.

With this fourfold approach, that of the pediatrician, the psychiatrist, the psychologist, and the social worker, it is possible to evaluate the child as a whole, his physical and emotional needs, his intellectual capacity, and all the details of his background. It is possible to show the parents the normal and the abnormal and to teach them that emotional disturbances are not to be feared and hidden, but rather that they may be constructively used if understood and dealt with early in the child's life. Knowledge is brought to the parents that behavior can be modified and that help can be obtained through the physician.

This program of prevention as developed by the hospital can be translated into the pediatrician's private practice. It requires, however, a thorough knowledge of habit formation, of emotional development, and of the growth of the personality. With this equipment the pediatrician must be prepared for one more important consideration. He must be prepared to devote time to the child and the parent, time for a full inquiry that will give him sufficient knowledge of the child, the parents, and the family relationships. Behavior can neither be understood nor modified in any brief interview. This is one certainty born of experience that the psychiatrist can pass on to the pediatrician.

The prevention of disorders of behavior, with its consequent increase in happiness and efficiency of the child, thus takes its place in preventive medicine, closely integrated with the problems of nutrition, immunization, and the other more physical preventive measures, and it opens a wider field for the practice of the well-equipped pediatrician.

AUTHORIZATION OF PHYSICAL EXAMINATIONS, TREATMENTS, OPERATIONS, AND AUTOPSIES

Ordinarily an operation must be performed strictly within the limits of the authority that has been given. Authority may be given, however, for the operating physician to use his own judgment, and this usually should be demanded by the physician.

Written Consent Preferred

Consent by word of mouth to an operation or an autopsy is probably the most common form of consent. . . . Oral consent is, however, open to misunderstanding and may be difficult of proof. Whenever it is to be relied on, consent should be given in unequivocal terms, in the presence of one or more disinterested witnesses. Written consent to an operation or to an autopsy is by far the safest, for it permits a clear record of the nature and extent of the operation or autopsy that is authorized. If the patient is a minor, authority for an operation must come from his parent or guardian.—*Board of Trustees, The Medical Society of the State of Pennsylvania.*

THROMBOCYTOPENIC PURPURA

THOMAS C. KELLY, M.D.
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THIS patient, M. J. R., a white female, and at that time 12 years of age, was admitted to my service on Feb. 28, 1938, complaining of black and blue spots on her skin and at the same time some bleeding from the nose and mouth.

Her father, mother, and 3 sisters are living and well, with no familial history of disease tendency.

She was born after a normal delivery, breastfed for 4 months, then fed artificially with good success, apparently receiving adequate amounts of cod liver oil and orange juice. She had pertussis and chickenpox in infancy, and in later years measles and mumps.

Her contact with the hospital dated back for a period of 9 months before her admission, during which time she was treated in the outpatient department for various minor ailments, the most significant of which became more or less persistent diseased tonsils and some recurring fugitive attacks of articular swelling and pain affecting various joints of the body, especially the fingers, knees, and ankles. Two months ago the hypertrophied and diseased tonsils were removed with good results and with no interference with her convalescence. About this time she menstruated normally for the first time; since then her menstrual periods have become more profuse and irregular.

About 2½ weeks previous to her admission to the hospital, she first noticed large black and blue spots on her hips, elbows, and face, with numerous areas of small pinhead pinkish spots in the same localities. At the same time a recurrence of her menstruation occurred accompanied with frank bleeding from the nose. With these signs, symptoms of marked irritability and restlessness appeared, accompanied by headache, anorexia, and vertigo, and she was definitely not as well as a month previously. The urine examinations in the outpatient department were always negative, and the blood picture showed hemoglobin 75 per cent, red blood cells 4,370,000, and white blood cells 15,400, with a differential count of polymorphonuclears 67 per cent, lymphocytes 31 per cent, and eosinophils 2 per cent. The coagulation time was 5 minutes and the bleeding time 7½ minutes. The platelet count on two occasions was 4370 and 8860 respectively. An x-ray of her long bones was negative for any evidences of scurvy or other pathologic changes.

On admission to the wards, her temperature was 100, pulse 92, and respirations 28. The systolic blood pressure was 130 and the diastolic 80, which subsequently continued normal throughout her stay. She was well nourished and developed, lying comfortably in bed, in no distress, and not acutely ill. There were innumerable, closely placed, pinhead-sized petechiae over the anterior aspect of both lower extremities, and less numerous ones over the anterior aspect of the chest, chin, upper extremities, and abdomen. There were bluish-yellow ecchymoses about 3 cm. in diameter on the lower extremities in the region of the knees, and at the right elbow and both wrists, and 2 larger areas at the right shoulder and the right sacro-iliac joint. The examination of the mouth was rather suggestive; although there was apparently no bleeding from the gums, there was a bright red area about 2 cm. square on the soft palate with a few minute petechiae surrounding it. The abdomen was soft with some slight tenderness in the region of the spleen, but both the liver and the spleen were not appreciably enlarged. Otherwise her physical examination was negative.

The laboratory reports were as follows: The initial urine examination was negative throughout, as were all subsequent ones. The blood showed hemoglobin 75 per cent, red blood cells 4,200,000, and white blood cells 8700, with a differential count showing polymorphonuclears 64 per cent, lymphocytes 31 per cent, and eosinophils 5 per cent. The platelet count was 4200, the coagulation time 6 minutes, and the bleeding time 7 minutes. The blood sugar estimate was 90 mg., and the blood urea nitrogen 13. Fragility test—hemolysis began in .44 per cent and was completed in .36 per cent. The clot retracted in 48 hours. The tuberculin test

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was negative. The blood calcium was 10 mg. and phosphorus 4.8 mg.

On the whole, during her stay in the hospital, the patient felt physically comfortable. Her temperature at times showed unexpected and unexplained rises to, at one time, 102 degrees, while on several occasions a rise to 101 degrees was noted, with no corresponding acceleration of her pulse rate and with no change in her physical well-being. The signs of petechiae and ecchymoses present on admission gradually disappeared, but the petechiae returned on several occasions with, however, no new areas of ecchymoses. She had several frank hemorrhages from the nose, at one time severe enough to require postnasal packing. No abdominal symptoms were present at any time and the spleen was never palpable. About two weeks after admission she menstruated profusely for 11 days, but did not menstruate again while in the hospital. The blood picture remained more or less constant, the hemoglobin and red blood cells being always slightly below normal figures. From an initial platelet count of 4200, almost daily estimations revealed no count higher than 10,910 with an average count throughout her stay of about 8000.

With an appreciation of the fact of the remarkable tendency of the disease to subside spontaneously, her treatment was mainly symptomatic and conservative. She was given several transfusions of blood, a high vitamin diet, large doses of calcium, ultraviolet radiation, and injections of liver extract—all without any appreciable effect on her blood picture. However, her general condition continued to improve, with a lessening of the evidences of purpura, and she was discharged with the request to return to the outpatient department after a stay of 7 weeks.

She remained under observation in the outpatient department for a year with practically no change in her general condition. She had attacks of petechiae and ecchymoses, which would subside and she would feel better, only to have further attacks. She had a recurrence of the attacks of pain and swelling of several of the large joints, causing great discomfort at the time, and her menstrual periods were on the whole rather profuse and prolonged.

During this period her urine examinations still remained consistently negative, but the blood picture showed some variation from its previous record. The hemoglobin had dropped to 65 per cent and the red blood cells to 3,530,000, with practically no change in the white cell count or differential count and with the platelets remaining below 10,000. She was then given x-ray treatments over the spleen (dosage of 25 ma. minutes—70 r) for a period of 5 months, receiving 12 treatments in all. This caused practically no change in her general condition. She still felt fairly well with no abdominal symptoms or signs, there was no more nasal bleeding, and her menstrual flow was a trifle less profuse, but she still showed recurring attacks of the purpuric manifestations and there was an occasional return for short periods of the pain and swelling of the joints. Repeated examinations of her blood revealed a slightly higher level for the hemoglobin and red blood cells than formerly, as on most occasions the hemoglobin was between 75 and 80 per cent and the red blood cells usually over 4,000,000. The rise in the platelet count was not so encouraging—in most instances it still stayed in the neighborhood of 10,000 and on two occasions dropped to 5000.

At length, in March, 1939, about 14 months after her initial attack, being by then too old for our hospital service, she was transferred to the University Hospital on the service of Dr. E. L. Eliason, to whom I am indebted for her subsequent report. A splenectomy was performed on Mar. 31, 1939, the spleen being very slightly enlarged and showing, on histologic examination by Dr. Fox, "follicular and endothelial hyperplasia. Marked fat deposits and phagocytosis. Slight fibrosis. Polynuclears and eosinophils increased." Her convalescence was smooth and quite uneventful. Four days after the operation the platelet count rose to 732,000 and 4 days later to 1,200,000. Within 10 days, however, it had fallen to 262,600, since which time it has averaged 55,000. The hemoglobin and red blood cell count likewise improved and her last blood count, made one week ago, showed a hemoglobin of 90 per cent, red blood cells 4,590,000, white blood cells 19,000, with a differential count of polymorphonuclears 52 per cent, lymphocytes 45 per cent, mononuclears 1 per cent, and eosinophils 2 per cent. The platelet count was 50,490.

Her physical condition has remained consistently good. The blood pressure has remained normal, the tourniquet test has remained negative, there is no discoverable adenopathy, the heart, lungs, and abdomen are negative, and she is now attending high school with good results. Her menstruation has become normal, but before each period she still, at times, has a few ecchymotic spots but never any areas of petechiae.

ABSTRACT OF DISCUSSION

Israel Binder (Philadelphia): I should like to ask Dr. Kelly if he tried snake venom.

Dr. Kelly: No, we did not try snake venom. Dr.

Grossman wanted to use it, but the patient was feeling so well symptomatically that we decided to let her go back to the outpatient department to see how she would get along. Then it was decided to have the spleen taken out, and we ceased to think about snake venom.

Harry Lowenburg, Sr. (Philadelphia): Some years ago, quite by accident, Dr. Theodore Ginsberg and myself had a patient with thrombocytopenic purpura who received injections of calcium and para-thor-mone extract.

By mistake, the child received 100 units of para-thor-mone a day for 5 successive days. One unit had been ordered for each day. He developed vomiting, abdominal pain, somnolence, and high fever. We were at a loss to account for the somnolence. We thought perhaps he might have cerebral bleeding. It was then discovered that he had received this large dose of para-thor-mone by mistake.

This led to a calcium estimation of his blood, and we found that it had risen to over 19. Of course, the injections of para-thor-mone were stopped. By the time his serum calcium had returned to normal, he was cured of the purpura.

Some time later we had another case of thrombocytopenic purpura with all the characteristic symptoms, including splenomegalia. In this case we induced hypercalcemia deliberately by giving large doses of para-thor-mone and calcium, and brought the patient's calcium up to 20. We had a very satisfactory result as far as his thrombocytopenic purpura was concerned.

These are the only two cases of thrombocytopenic purpura with which I have had any experience which were apparently benefited by hypercalcemia. The report of these cases was published and attracted some attention throughout the country, and the therapy has been tried by others, some with success and some with failure. I mention this experience for what it is worth. I thought if your patient returned, you might consider such therapy, especially inasmuch as her platelet count has remained much below normal.

MAD DOGS

Every now and then a book of fiction is published in which the theme of the story deals with an evil person who sets loose mad, vicious dogs to protect him from his enemies so that he might pursue his malicious ways.

Today we are living through such a period. Not alone in Europe, Africa, and Asia have the mad dogs of war been loosened but also the mad dogs of economic and social existence have been released from their necessary restraint in the United States to make more rapid a sure but slowly progressing change.

It has even permeated the field of health. Idealists have been given free reign and among them are those whose main attributes are instability and lack of respect for sane evolution. It has been said that ideals are dangerous explosives, to be entrusted only to experienced hands.

In the Wisconsin legislature the American Medical Association was accused of having refused to take cognizance of the fact that large groups of our population are deeply concerned on the subject of how they can beat the high cost of medical care. ". . . But these people are being thwarted in their efforts in one little simple device on the part of the A. M. A. and its constituent societies . . . !" This "device" referred to is evidently the action of hospital staffs in refusing membership to unethical doctors of medicine.

Sympathy with the desire to provide all people with the best physical care and comforts is offered generally. In the hands of some politicians and idealists this means the revolutionary destruction of great principles—those great principles, by adherence to which hundreds of thousands of men sacrificed the indulgence of their mental and physical welfare in order that a greater share of these benefits may be reserved for the unfortunate.

Strive as one may to find more sincere aims, the only connecting link in the entire chain of facts is an endeavor to enslave the medical profession. When that day comes, the physician must be in politics for his livelihood. Now, the physician needs to be in politics to destroy these mad dogs and restrain and restrict the idealist, as one punishes an irresponsible child—not prohibit free exercise, but keep it within the bounds of sanity until security and realization of responsibility make safe their untrammeled freedom.

Benjamin Franklin once said, "They that can give up essential liberties to obtain a little temporary safety deserve neither liberty nor safety."

GLASS TIRES RUNNING ON GLASS BRIDGES FORESEEN

With tires containing glass you may be driving over bridges made partly of glass a few years from now.

New super-highways, like the Pennsylvania Turnpike, which make possible sustained speeds of as much as 75 miles per hour, may result in a new kind of tire. Already experiments are being made with thin light tires, especially adapted for such use. Older tires, with their thick, heavy tread, are torn apart by the centrifugal force. Glass as well as steel and other materials are being tried for tire cords to give the strength needed to offset the decreased thickness.

Also, word has been received from England of the use of glass as reinforcement for concrete. Developed first as a replacement of steel in wartime construction, the inventors, John A. Lincoln and A. W. Soden, have expressed the view that all ordinary loading can be safely carried on glass-reinforced spans, for bridges or other structures, up to 20 feet, and that further studies may increase this to 40 feet.—*Science News Letter,* July 5, 1941.

Among the 28,139 students admitted to the University of Wisconsin between 1931 and 1939 who were given complete physical examinations, there were 289 with heart disease. The sex ratio was 1.7 females to 1 male.

FAMILIAL EOSINOPHILIA

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THE occurrence of eosinophilia in several members of a family was first described by Klinkert[1] in 1911. Others since then have added well-defined instances of this phenomenon to the literature, as Gaugain,[2] Armand-Delille, Hurst, and Sorapure,[3] Bastai,[4] Cirio,[5] Spiro,[6] Smits,[7] Lucas,[8] and Cattaneo.[9] Stewart[10] in 1933 reported 4 families with the condition. Recently, Atmar[11] contributed very important information with biopsy studies on the liver of one in a family showing eosinophilia. He found numerous grayish-white areas on the surface of the organ which on microscopic examination consisted of "dense infiltration of the liver tissue with eosinophilic leukocytes which resulted in complete replacement of hepatic cells." Most of the authors emphasize the fact that the polymorphonuclear eosinophils involved in the unusual blood picture are of the adult type normally found in well people. This fact has lead to confusion, since in most cases of eosinophilic leukemia the adult instead of the young form of blood cell (characteristic of most leukemic states) predominates.

FAMILY C.—M. E. C. was the initial patient in our study. She was born spontaneously in October, 1936, after a short labor. Her birth weight was 7 pounds 12 ounces. She was fed cow's milk formulae and was regularly examined in our clinic at the St. Christopher's Hospital. The first thing of interest in her medical history was an attack of urticaria in August, 1937, when aged 10 months. A blood count made in February, 1938, because of fever and erythematous spots on her cheek, was within normal limits. During April, 1938, she had irregular fever, accompanied by urticaria and postcervical adenitis. She made repeated visits to our clinic during 1938 for skin lesions, which were classed as lichen urticaria. In February, 1939, she was brought in for study because of poor appetite. At this time, aged 2 years and 4 months, she weighed 28 pounds (average weight, 34 pounds). Pallor was noted. Her spleen was 2 fingers below the costal cage, and there was some enlargement of the axillary and inguinal lymph nodes. She was admitted to the hospital at this time for study, where the following pertinent facts were revealed: There was no family history of allergy, but all of the siblings and the patient had had attacks of an itching skin rash which had, in some cases, been seen in the hospital and diagnosed "lichen urticaria." Blood count: hemoglobin 50 per cent, erythrocytes 4.1 million, leukocytes 42,800, with 6 per cent neutrophils, 25 per cent lymphocytes, and 69 per cent eosinophils. The eosinophils were of the adult type—the same as those observed in normal persons. There was no fever. There was no evidence found of intestinal parasites, and the blood serum agglutination test for Trichina was negative. An x-ray of the long bones was negative. A bone-marrow puncture revealed an increase in eosinophilic cells. After a few weeks she was discharged.

We have followed her carefully since discharge from the hospital. She has now attained normal weight for her 4 years. The hemoglobin and red cells are normal, and she feels quite well. The spleen is just palpable, and the lymphadenitis is gone. Except for an occasional cold, and a short attack of diarrhea, she has been free of complaints and able to be about and take a normal part in her childhood community. Her total white blood count has shown a tendency to decline, particularly during the past few months, but the eosinophils have remained high.

On Aug. 20, 1940, the white blood cell count was 13,700 with 40 per cent adult eosinophils. We have been able to examine 4 other members of this family with the following interesting findings (see Table I):

We see here a brother and the mother with normal blood pictures, but 2 sisters with elevated eosinophilic counts and practically normal total white blood counts. All of these children have had urticarial lesions at some time. Neither the mother nor the siblings have at any time shown any enlargement of the spleen or lymph nodes.

COMMENT: We feel as though these children with eosinophilia belong to the class of familial eosinophilia. One could possibly say that the stimulus for increase in the blood eosinophils was the allergic state of urticaria, even though the blood picture was constantly present, and even though there were long periods of freedom

TABLE I

EOSINOPHILIA—FAMILY C

Sex	*Age*	*White Blood Cells*	*Eosinophils (Per Cent)*	*Clinical Notes*
F	4	42,000	69	Urticaria, spleen, and lymph nodes slightly enlarged
F	2½	12,000	18	Urticaria
F	8	10,000	16	Urticaria
M	10	8,000	6	Urticaria
F	30	10,000	0	Mother

Neither ova nor parasites were found in these children. Skin tests to Trichina antigen were negative.

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from rash. It should be noted that there have been allergic conditions in some of the families reported in the literature as cases of familial eosinophilia (Stewart and Klinkert).

A discussion of the possibility that M. E. C. suffers from leukemia of the eosinophilic type seems in order, particularly in view of the malnutrition, enlarged spleen, palpable lymph nodes, and exceedingly high white blood cell count. It should be noted here that, curiously enough, many of the cases of so-called eosinophilic leukemia proven at autopsy showed the increase in white blood cells due mostly to the adult eosinophil. Thomsen[12] introduces a few interesting facts along this line. He reports the case of an 11-year-old boy in whom the onset of the disease was acute, with fever, enlarged spleen, and lymph nodes in which there was a transition from typical eosinophilic leukemia to entirely myeloblastic leukemia. He mentions that, before the transition mentioned, there was an "enormous, absolute, and relative increase in the number of eosinophilic granulocytes, but the dominating cell form has a particularly mature appearance, with segmented nucleus and coarse granulation. On close examination these cells are found to differ from the normal eosinophilic granulocytes in that they are considerably larger, and the nuclei are more 'loose' in structure than normally; the protoplasm is more abundant, and most often distinctly basophilic; the granules are abnormally large, and their number is far smaller than in normal eosinophils; and often the granules are heaped together in a single eccentric group."

Table II

Eosinophilia—Family G

Sex	Age	White Blood Cells	Eosinophils (Per Cent)	Clinical Notes
F	8	9,800	21	History of pinworms and hives
F	12	10,950	10	
M	2	11,700 to 15,450	9 to 23	Enlarged spleen, slight lymphadenopathy
M	5½	11,900	10	Spleen slightly enlarged
M	10	10,000	13	Pinworm ova found
M	30	9,000	0	Father
F	30	10,000	8	Mother

All children had negative skin tests to Trichina antigen.

The fact that our patient M. E. C. has made such an improvement in general nutrition and total white blood cell count, coupled with the finding of eosinophilia in siblings, takes her out of the class of myeloid leukemia, and thus we include her as a representative of familial eosinophilia. It should be repeated here that Atmar seems to have shown that patients with familial eosinophilia may have infiltration of the liver by eosinophilic cells.

Family G.—We became aware of eosinophilia in this family when D. G. was first brought in because of a cold. He was 16 months old at this time. His blood count then revealed hemoglobin 74 per cent, red blood cells 4,280,000, white blood cells 14,700, polymorphonuclears 19, eosinophils 9, lymphocytes 68, and mononuclears 4. The spleen was enlarged one finger below the costal cage and there was shotty enlargement of the inguinal glands. He has been quite well during all the time we have observed him to date, and his eosinophils have gone as high as 23 per cent and as low as 6 per cent. The white blood cell count has varied from 11,700 to 15,450.

Each of 4 siblings and the mother were found to have eosinophilia without leukocytosis of varying degrees (see Table II). The father does not show eosinophilia. From one of the children we have recovered pinworm ova, and the mother has found the adult worms in the stool of another. None of the children were sensitive to the Trichina antigen, but there was an indefinite history of hives in one girl.

Comment: This group is a classical example of familial eosinophilia, since all children and the mother have the blood disturbance without there being any definite cause. One might suppose that the condition is an unusual response to infection with the Oxyuris vermicularis, assuming that all of the people in the household have the infection.

Summary

Two families have been presented, most of the members of which show an increase in the number of the normal adult type of eosinophils.

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ABSTRACT OF DISCUSSION

Samuel Goldberg (Philadelphia): I am wondering if there is a history recorded about the diet of those children; for example, had they gone to any of the hamburger stands for sandwiches?

Last winter a child took ill with malaise, loss of appetite, and loss of weight. A blood count revealed 48 per cent eosinophils. We hospitalized the child and found that the symptoms were suggestive of trichinosis. The child was negative to the antigen, but the biopsy revealed the Trichina. The brother and the father of this patient had gone to a hamburger place and had eaten hamburger steak, and all 3 were infested with Trichina and showed high eosinophil counts.

Dr. Bowman (in closing): We tried very hard to eliminate trichinosis as a possible cause of this interesting blood picture. In the first place the mother insists that there is no possibility that her children had any meat which she was not "sure of." Second, the patient had a negative skin test and serum agglutination for Trichina infection. The serum of the siblings was not tested, but they all had negative skin tests.

SUBCUTANEOUS UROGRAPHY

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THE pediatrician is rather loath ofttimes to call for a urologic consultation. Perhaps he fears pain for his little patient. Children tolerate cystoscopic procedures as well as or better than adults. Retrograde pyelograms require cystoscopy, and often in the male necessitate a general anesthetic. This is an additional risk and probably accounts for the lack of urologic consultations. However, a thorough urologic examination with roentgenologic demonstration of the renal calices, pelves, and ureters is an essential part in a clinical study of abdominal tumors to rule out kidney involvement and particularly congenital anomalies. Statistics presented by Campbell show urologic conditions to be frequent in infants and young children. Early detection, followed by proper urologic procedures, conserves kidney tissue.

Excretory urography has been the solution of the difficulties presented by the retrograde method. The intravenous injection in infants is at times difficult and tedious, due to the small size of the veins and the lack of co-operation of the patient. This can be overcome by the use of subcutaneous injection of the contrast media. Many pediatricians, urologists, and radiologists are unfamiliar with the procedure. Butzengeiger demonstrated this use in 1931 by the injection of 500 c.c. of a 4 per cent solution of skiodan subcutaneously in each axilla of 30 patients. Hildebrand in 1932, Nissel in 1933, Beer and Theodore in 1934, Senger and Ruggiero in 1936, Swick in 1936, Dryfus in 1937, Perman and Lichenstein in 1937, Travis in 1937, Adams and Hunt in 1939, and Nesbeth and Douglas, also in 1939, have all aided in improving the method by various modifications and variations in technic.

It thus has been demonstrated that the kidney pelves, calices, and ureters are as well shown by the subcutaneous method as by the intravenous injection. The subcutaneous method has been found to be satisfactory, adequate, and safe as a routine procedure at this hospital (St. Christopher's, Philadelphia). There have been no side reactions. In order to detect the few cases of idiosyncrasy due to allergy to iodine, and to prevent sudden deaths, as have been reported by Dolan and Crane, all patients are tested for idiosyncrasy before proceeding with excretory urography. This is done whether the medium is to be injected intravenously or subcutaneously. In adults 2 c.c. of diodrast are held in the mouth for 10 minutes. If the tongue or mouth become numb, or if the patient shows other symptoms suggesting allergy, the mouth is immediately washed and the examination is discontinued. No untoward symptoms appearing, the diodrast is swallowed and 20 minutes later, provided the patient has shown no bad effects, the diodrast is administered. In infants the test is made by applying the solution directly to the mucosa of the mouth with an applicator.

The following is the technic used by Jacob H. Vastine, 2nd, at St. Christopher's Hospital: The skin surface is prepared with iodine and alcohol. A small wheal is raised with novocain, 1 per cent solution, injected in the region of the angle of each scapula. A small nick is then made in each area with the point of a scalpel, and 2 clysis needles are inserted subcutaneously. The contrast medium, consisting of 80 c.c. of normal saline solution to which 20 c.c. of 35 per cent diodrast has been added, is introduced through these needles. The needles are then removed, and collodion is applied. A lollipop is used to divert the child's attention and keep his mouth occupied. Sedatives are not employed. A plain or scout film is made before commencing the injection. No set routine is followed in the subsequent films. Usually, however, films are made at 5-minute intervals following the injection of the dye until 3 films are taken, and then at 10-minute intervals, completing examination in about 50 minutes following injection. All films are developed as soon as exposed, which furnished a guide to the intervals between exposure. Ureteral compression is not used.

Certain precautions are necessary: (1) idiosyncrasy, as above; (2) care must be taken in

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Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

injecting into the infrascapular region that the media does not overlap the level of the kidneys; (3) investigate the history for previous clyses which will interfere with the rate of absorption of the dye, in which case the dye may be given intramuscularly.

Satisfactory visualization of the kidney, pelves, and calices, and also the ureters, has been obtained in practically all cases.

In some cases it provided better shadows than the intravenous method. The amount of the dye which one can give by this method being greater than that of the intravenous method probably accounts for the better visualization.

Conclusions

1. Subcutaneous or intramuscular excretory urography has an advantage over intravenous urography in the ease of administration and the satisfactory films obtained.

2. No ill effects such as slough, etc., were noted.

3. Urologic diagnoses can be made safely and without discomfort to the young patient.

ABSTRACT OF DISCUSSION

BENJAMIN DISEROAD (Philadelphia): I should like the doctor to tell us again the quantity injected and the percentage.

DR. MULLEN: It was 80 c.c. of normal saline solution, with 20 c.c. of diodrast. That is what we have used here at this institution, although neoskiodan and neo-iopax have been used.

The 4 per cent isotonic solution is the one that Butzengeiger originally introduced in the axilla. He used 50 c.c. of a 4 per cent solution. That was the original work done in 1931. Since then we have found that more concentrated solutions can be used with safety. In fact, there was an exhibit at the A. M. A. in St. Louis where Robb and Steinberg demonstrated the use of a 70 per cent solution of diodrast. The 70 per cent solution was used without giving rise to any slough.

JOHN D. STURGEON, JR. (Uniontown): I believe you said that you gave a test to adults by using it in the mouth. How about the children with the idiosyncrasies?

DR. MULLEN: In small children we apply it in an applicator to the mucosa of the mouth and watch for any signs of idiosyncrasies.

WILLIAM H. CRAWFORD (Upper Darby): Do you use this as the method of choice, even in the older children in whom veins can easily be used? We use it in younger children and in adults in whom the veins are difficult to get at. Sometimes the veins are sclerosed and it is impossible to inject them.

RALPH M. TYSON (Philadelphia): The pediatricians on the medical service at the hospital find it very convenient to make use of this subcutaneous urography. If we were to ask the genito-urinary department to do retrograde cystography on all cases we suspect of having kidney disease, they would be overwhelmed with work. This relieves them of unnecessary instrumentation.

"COMPLETELY OUT OF PATIENCE"

Physicians in San Francisco are reported to be feeling the crack of the politicians' whip with the result that hundreds of them have resigned in protest from the Municipal Employees' Health Service System. The following account of the action of the physicians appeared in the *San Francisco Examiner* on Mar. 28. The Municipal Health Service was started some years ago and its success, to date, has largely been due to the coöperation in the face of constant difficulties by the medical society and its members. The action of the board is regarded in San Francisco as advance evidence of what would certainly happen if health insurance were made compulsory and run by politicians.

> San Francisco physicians began resigning from the Municipal Employees' Health Service System by hundreds yesterday in protest against the "capricious and arbitrary actions" of the system's board of directors.
>
> Simultaneously, the board heaped new fuel on the fire by failing to approve the January fees to physicians serving the system—the failure resulting from the fact that only 3 out of 8 directors responded to President Cameron King's summons to a special meeting to act on the matter.
>
> The wholesale resignations which poured in throughout yesterday protested specifically the board's failure to keep its promise to effect a new system of fees. They were conditional resignations, but were submitted with the understanding that they would become final if the board failed to get the new schedule into action within "a reasonable time."
>
> The county medical society had suggested that the physicians employ this means of acquainting the board with their determination to procure action, and the hearty response brought this comment last night from Dr. L. Henry Garland, society secretary:
>
> "This tremendous flood of conditional resignations received within 36 hours after the society suggested this form of protest is proof that the doctors serving the system are completely out of patience with the board's capricious and arbitrary actions.
>
> "The board's actions themselves are proof of what is to be expected when health insurance is made compulsory and turned over to politicians."—*Minnesota Medicine.*

A report on the first full year of operation of Indiana's premarital blood test law showed that positive results were obtained in tests for syphilis in 1.6 per cent of marriage license applicants. Of 64,913 tests, 1098 showed positive syphilis reactions.

Survey of Five Fatal Cases of Influenzal Meningitis

CHARLES R. BARR, M.D.
Philadelphia, Pa.

THESE 5 patients, all female, varied in age from 6-month-old twins to a young child of 4 years. With one exception, June, these cases all occurred in the month of February. The hospitalization time was from 9 hours to 31 days. One patient was born prematurely at 8 months, and one of the twins, although full term, was immature, weighing 3 pounds and 8 ounces. The other 3 births were normal. All the patients were fed adequately for age up to the time of onset. The maternal uncle and grandfather of one patient died of active tuberculosis while the mother was pregnant, she having some type of lung operation during this time. One patient had mumps previously.

The admission chief complaints were as follows: In the first patient, discharging ear, headache, fever, and convulsions; in the second, drowsiness, fever, and convulsions; in the third, pallor, sweating, convulsions, and edema of the hands and feet; in the fourth, fever and labored respirations; and in the fifth, photophobia, irritability, and convulsions.

The present illness dated back in the first patient to 3 weeks with a common cold and *otitis media;* in the second, to 6 days with an abscessed ankle, possible septicemia, and convulsions; in the third, to 2 days with a common cold and *otitis media;* in the fourth, to 3 days with a common cold, fever, and chest signs; and in the fifth, to 9 days with a common cold, from which developed irritability to touch, refusal of food, photophobia, and convulsions. Note that in all but one case the condition was preceded by upper respiratory disease. In the other case it was preceded by a suspected blood stream infection. The meningitis was secondary.

The physical examination showed, in the first patient, spastic extremities, exaggerated reflexes, a stiff neck, and unconsciousness; in the second, listlessness, dullness, lethargy, reddened left eardrum, rigid neck, and a fluctuating area over the left lateral malleus; the reflexes were sluggish but equal; in the third, a toxic state, staring eyes, questionable fontanelle bulge, profuse posterior nasal drip, swelling of dorsum of hands and feet which pitted on pressure, and negative neurologic signs; in the fourth, irritability, reddened left eardrum, dulness at the base of the right lung, tubular breathing over this area, and a grade I systolic murmur at the apex of the heart; the reflexes were normal; and in the fifth, clonic convulsions of the face, eyelids, upper and lower extremities, no response to external stimuli, and bulging fontanelle; the eyes showed a fine nystagmus and no reaction to light; all reflexes were hyperactive; there was no nuchal rigidity.

The admission diagnoses were as follows: in the first patient, meningococcic meningitis; in the second, septicemia and encephalitis; in the third, acute nephritis with uremia; in the fourth, pneumonia (right lower base); and in the fifth, intracranial pathology, possibly tuberculous meningitis.

The progress in all these cases was definitely toward a fatal termination, some more rapidly than others as indicated. Nothing was found in the history and physical signs that led us to suspect a diagnosis of influenzal meningitis in any one of the cases.

The first spinal tap was done on the first patient on admission to the hospital, and it was returned positive for Haemophilus influenzae after the patient died; on the second patient on admission, but it did not return positive until the twelfth day after repeated taps; on the third patient within the first 24 hours, and it was reported positive the following day; on the fourth patient on the fourth day, and it was reported positive the same day; and on the fifth patient on admission, the direct smear was positive, which was verified by positive culture. The typical finding was that of a gram-negative pleomorphic bacillus (assuming cocci, diplococci, short bacilli, and filament forms).

The other spinal fluid findings were characteristic of purulent meningitis. In appearance the fluid varied from clear and colorless through ground glass to frank pus. The pressure varied

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from 10 mm. to 60 mm. Hg. The cells varied in number from 110 to 6462; the polymorphonuclears reached 98 per cent in the later taps; in the earlier ones the cells were mainly lymphocytes. The earlier the tap, the fewer cells were found. In those specimens examined, the chlorides were increased and the sugar decreased. There was an increase in albumin and globulin, and in one specimen a web formation occurred.

The urine was generally negative except for red blood cells in the one case. The blood picture was that of severe purulent infection with marked leukocytosis, and a big variation in the percentage of lymphocytes and polymorphonuclears. This is opposite to the findings in systemic influenza, which is characterized by a leukopenia. Schilling differentials were studied. The blood cultures were persistently negative.

The temperatures ranged from 101 to 108 F. No diagnostic factor of importance could be determined by the temperature variations.

Treatment

In the first case antimeningococcic serum (15 c.c.) was given intrathecally after the removal of 25 c.c. of spinal fluid. This is a general rule always carried out in any suspected case of meningitis until a definite diagnosis is established. In our other 4 patients, sulfanilamide in doses of 2½ to 10 grains every 4 to 6 hours was given. This is based on the dosage of one grain per pound of body weight per day. The first dose is one-half of the total daily dose. In one case methylene blue (1 grain every 12 hours) was given to combat cyanosis. Stimulants, such as adrenalin and sodium benzoate, or sedatives, such as chloral hydrate, phenobarbital, or even paragoric, were given as indicated. Blood transfusions were done in 4 cases. Intramuscular and intrathecal injections of lyophilized B. influenza serum were given, care being taken to remove more spinal fluid than serum injected in all cases. Anti-influenzal horse serum with complement was given, both intramuscularly and intrathecally, in the proportion of 8 c.c. of complement to 15 c.c. of antiserum. There is a lack of complement in the spinal fluid of H. influenzal meningitis, hence the need for added complement. Gram-negative organisms produce a low phagocytic response, so that the phagocytes produced by the antiserum are enhanced when the proper amount of complement is added to the antigen. Gavage feedings were used when indicated, as was subcutaneous clysis of normal saline.

The autopsy in the one case so studied showed a purulent meningitis and cerebritis. The brain was covered with thick creamy pus. Pus was found in the frontal lobes, the lateral ventricles, the third ventricle, and around the spinal cord. An extensive purulent infection of the meninges prevented either complete drainage or the distribution of the therapeutic materials.

Our 5 cases demonstrate (1) the lack of early diagnosis due to the paucity of definite physical signs, (2) the great dependence on laboratory study of the spinal fluid, and (3) the ineffectiveness of treatment.

CONNECTICUT STATE MEDICAL SOCIETY TO HOLD SEVENTEENTH CLINICAL CONGRESS

The Connecticut State Medical Society will hold its seventeenth annual clinical congress in the Sterling Law Buildings of Yale University, at New Haven, on Sept. 16, 17, and 18.

Among the guest speakers from outside of Connecticut will be Drs. Sara Jordan, Paul A. Younge, Oscar F. Cox, James L. Poppen, Gilbert E. Haggert, Samuel A. Levine, Frank D. Lathrop, Grantley W. Taylor, and Frank H. Lahey, of Boston; Emil Novak, of Baltimore; Robert H. Kennedy, Ernst P. Boas, David C. Bull, Burrill B. Crohn, Thomas Francis, Jr., and Jerome T. Webster, of New York City; E. Jefferson Browder and Matthew Walzer, of Brooklyn; Y. D. Koskoff, of Pittsburgh; George St. J. Perrott, of Bethesda, Md.; and Irvine H. Page, of Indianapolis. In addition to these speakers, many Connecticut physicians will present papers.

Tuesday morning's session will be devoted in the main to gynecologic subjects, Tuesday afternoon's to the effects of trauma, and Wednesday morning's to cardiovascular disease. The remaining sessions will present a varied and well-rounded program of interest to all physicians.

Members of the congress may enroll in a special course in traumatic surgery to be given under the direction of Dr. Samuel C. Harvey of the Yale School of Medicine. This course will begin at the time of the congress and continue at weekly intervals until completed.

Any physician may register for the congress. The registration fee for the congress is $2.00, and for the special course in traumatic surgery is $1.00 additional. Detailed information and registration cards may be obtained by writing to The Connecticut Clinical Congress, 258 Church Street, New Haven, Conn.

I'm an old man. I've had lots of troubles, and most of them never happened.—*Attributed to an old Quaker.*

The Prevention of Diabetes

JOHN DAVIS PAUL, M.D.
Philadelphia, Pa.

At present there are approximately 52,000 people in the United States who have been crippled by infantile paralysis. At a certain time each year it is a comparatively easy matter to raise a million dollars and over for the improvement of these 52,000. There are approximately 185,000 tuberculosis patients confined to institutions in this country and at Christmastime it is an easy matter to raise hundreds of thousands of dollars for the improvement of these patients and for the prevention of tuberculosis. We have 2,000,000 diabetics in the United States and nobody seems interested in preserving them as a useful, self-supporting group of citizens, to say nothing about preventing the disease.

As far back as 1935 Dublin plotted the death rate from diabetes against that from tuberculosis and showed that between 1940 and 1945 the death rate of diabetes would exceed that of tuberculosis. At that time the diabetic death rate exceeded that of tuberculosis in Nebraska and came very close in several other states. In our own state the death rate from tuberculosis in January, 1939, was 39.9 per hundred thousand, while that from diabetes was 38.7; but in January, 1940, the death rate from tuberculosis was 37.1 per hundred thousand, while that from diabetes had risen to 45.3. The number of diabetics should continue to increase; first, because we are diagnosing them earlier; second, because modern treatment keeps them alive longer; and third, because our juvenile diabetics are kept alive until adult life when the females give birth to potential diabetic children. In addition, proper control of the female diabetic permits her to proceed through a normal pregnancy and give birth to almost as many live babies as the normal mother.

Joslin and Dublin have shown conclusively that early diagnosis reduces the mortality and prolongs the life expectancy of the diabetic. What can we do to assist in making this early diagnosis? Certainly the simplest, easiest, and most accurate method for the diagnosis of the potential and early diabetic is the Exton one-hour, two-dose sugar tolerance test. This is based on Allen's dextrose-paradox law, which states that the more carbohydrate you give to the normal person, the more he will burn, while the more you give the diabetic patient, the less he will burn. The criterion for a positive diagnosis of diabetes is that the second blood sugar determination shall be 65 or more milligrams higher than the first and the third blood sugar estimate shall be 10 or more milligrams higher than the second. The first blood sugar determination should be fasting; immediately after this, 50 grams of glucose dissolved in 325 c.c. of water are given by mouth; one-half hour later the second blood specimen is withdrawn and a second oral dose of 50 grams of glucose dissolved in 325 c.c. of water is given; one-half hour later the third and final specimen of blood is withdrawn. A specimen of urine is collected fasting and at the one-hour interval.

In Joslin's series the diabetic incidence was 6.9 per cent in parents between the ages of 30 and 59 with a diabetic background as compared with 0.7 per cent in the same age group with a nondiabetic background—almost 10 times as great. When the parents were 60 or over, those with a diabetic background had an incidence of 9.7 per cent as compared with 3.2 per cent for those with a nondiabetic background—over 3 times as great. The same condition was found when the brothers and sisters of diabetics and nondiabetics were examined. When the siblings were over 30 years of age, diabetes was present in 2.3 per cent with a diabetic family history and in only 0.3 per cent when the family history was nondiabetic—almost 8 times as great. When the siblings' age was between 30 and 59, the incidence had increased to 5.3 per cent for the diabetic and 0.4 per cent for the nondiabetic—over 13 times as great. When the siblings were 60 or over, the incidence had increased to 11.5 per cent for the diabetic as compared with 2.7 per cent for the nondiabetic—over 4 times as great. Priscilla White in her series of over 600 juvenile diabetics has shown conclusively

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that the predisposition to diabetes is inherited as a recessive mendelian trait.

With this in mind we recently studied the parents of 15 of our juvenile diabetics at St. Christopher's Hospital and Episcopal Hospital, employing the one-hour, two-dose sugar tolerance test. Of the 30 parents examined, 12 or 40 per cent were positive. Of the 37 siblings, 10 or 27 per cent were positive. A total of 67 parents and siblings were examined with 22 (32 per cent) positive for actual or potential diabetes.

Obesity is the factor most often met in the etiology of diabetes in adults, particularly in female patients. The insidious accumulation of fat resulting in obesity occurs most often during puberty, pregnancy, menopause, convalescence from operations, accidents, and illness, or change to sedentary occupations.

Continued investigation at the Baker Clinic revealed that 20 to 60 per cent, according to age of the male diabetic, were 20 per cent overweight, while 5 to 40 per cent were 30 per cent overweight prior to the diagnosis of diabetes. When females were studied, 30 to 70 per cent were 20 per cent overweight, while 20 to 48 per cent were 30 per cent overweight. Following this lead, 200 women past 45 years of age, and one or more pounds overweight, were subjected to the one-hour, two-dose sugar tolerance test. Of this number, 73 were negative, 26 gave a plus 1 reaction, 9 plus 2, 65 plus 3, and 27 plus 4. This means that 35 or 17½ per cent of the overweight females, past 45, are potential diabetics and 92 or 46 per cent are actual diabetics. That makes a total of 127 or 63½ per cent of this group that have the diabetic taint.

What is to be done about this appalling diabetic tendency? These 127 patients with positive curves were placed on high carbohydrate, low fat, low calory reducing diets. Ten refused to co-operate and either maintained their weight or continued to gain. At the end of two years, 2 of the potential diabetics in this group had progressed to a state of true diabetes and 3 of the true diabetics had developed symptoms of the disease sufficiently severe to require insulin. Of the remaining 117 patients, 110 or 94 per cent were much improved. The potential diabetics maintained a normal tolerance curve as long as they kept their weight between standard and 10 per cent below standard. The actual diabetics were able to maintain a normal fasting blood sugar with a 24-hour urine specimen sugar-free as long as they adhered to the diet sufficiently to maintain their weight between standard and 10 per cent below standard. Two of the potential diabetics developed true diabetes and 3 of the actual diabetics progressed to the stage where they required insulin as the result of severe infections.

Conclusion

Diabetes is more common in the relatives of diabetics.

Diabetes is more common in females.

Diabetes is more common in overweights.

Diabetes is more common past 45 years of age.

Watch for diabetes in older women.

Warn patients against overweight.

Warn against intermarriage between families with diabetic histories.

Search for early cases in overweights, particularly females, especially those with a family history of diabetes.

High carbohydrate, low fat diets that maintain the weight between standard and 10 per cent below standard will prevent the development of actual diabetes in many of those predisposed to the disease.

SHORT NEUROPSYCHIATRIC EXAMINATION FORM

Name .... Age	Occupation ....
Family history of mental or nervous disease or epilepsy	While we no longer place too much stress upon hereditary factors in the etiology of mental disease, an individual whose family is especially burdened in this respect should be considered more susceptible than in the case of a negative history.
Personal history .... Childhood diseases.	Encephaltis lethargica often mistaken for pneumonia, whooping cough, etc., Poliomyelitis.
Developmental history: Age began walking and talking	Retarded development significant and may result in future maladjustments.
Enuresis, stammering	Evidence of neurotic constitution or environmental adjustment defects.

Truancy—temper tantrums	Instability in childhood suggests neurotic temperament.
Conflicts with family or police	Suggests psychopathy and should be followed further.
Police record.	
School record	This information may suggest intellectual retardation or deficiency and, if marked, should be followed by formal intelligence tests.
Highest grade.	
Attained at age?	
Failures.	
Why left school.	
Occupational history	If frequent changes are made for reasons other than advancement, suggests instability and adjustment difficulties and should be carefully investigated.
Medical history	Frank mental or extreme nervous disorder history should exclude, and if previous hospital record is uncovered, there should be no question about rejection.
Serious injuries or illnesses with emphasis on nervous or mental conditions.	
Alcoholic or drug habits	Indicates poor emotional adjustment. Look for physical signs of chronic alcoholism or drug addiction.
Mental survey	In referred cases—company officer should report peculiarities of behavior which will prove a helpful lead for the examiner.
Observe and note appearance and general behavior, such as: Irritability, seclusiveness, sulkiness, depression, shyness, suspicion, dullness, etc.	
Accessibility	Evaluation of these factors can be made as examination progresses.
Attention	
Co-operation	
Emotional response:	
Elated	Suggests cyclothymic personality.
Depressed	
Inadequate	Suggests dementia praecox.
Inappropriate	
Silly and immature	
Indifferent	
Hallucinations or delusions	
Odd experiences	Suggests at least a psychopathic personality, or a neurotic make-up.
Idiosyncrasies	
Fears	
Sensorium	These topics should give one a good idea of the general intelligence and adaptability of the recruit.
Orientation.	
Current topics.	
Abstract judgment.	
Patriotic drive.	
Neurologic examination:	
Pupillary reflexes	Abnormalities in this sphere suggest tabes, paresis, or other organic states.
Extra-ocular movements	Defects often seen in postencephalitic cases.
Facial muscles and innervation (tics).	
Tongue movements	Suggest paresis.
Speech tests	
Tongue scars (also face and head)	Suggest epilepsy.
Motor co-ordination: Gait, station	Suggest tabes.
Finger to nose test	Intention tremors suggest multiple sclerosis.
Tremors	
Atrophies	Possible progressive muscular atrophies, dystrophies, and syringomyelia.
Reflexes:	
Deep: Triceps ... Biceps	Suggest organic disorders.
Patellar ... Ankle	
Clonus	
Superficial: Abdominal	
Plantar	
Sensation:	
Point discrimination (sharp or dull)	Cutaneous anesthesias suggest hysteria. Follow-up for contraction of visual fields, phobias, doubts, anxiety attacks, etc.
Vibration ... Position	
Glandular system: Sex organ development	Possible dyscrasia.
Hair distribution ... Nails	
Skeletal development	
Habitus	Suggests hyperthyroidism.
Persistent tachycardia, exophthalmos, palpable thyroid	
Excessive sweating or blushing	

(From the *American Journal of Psychiatry.*)

JOHN J. SHAW, M.D.

1883-1941

An editorial obituary of Dr. Shaw, Secretary of Health of the Commonwealth of Pennsylvania from 1939 to 1941, will be published in the September issue. Following are some of the tributes to Dr. Shaw which have already appeared in county society publications.

Weekly Roster and Medical Digest, June 28, 1941
(Philadelphia County Medical Society)

As we go to press we learn of the sudden and untimely death of John J. Shaw, M.D., Secretary of Health of the Commonwealth of Pennsylvania, in Harrisburg on Tuesday, June 24, 1941.

Under his guidance the Department of Health of the Commonwealth has attained a high place throughout the country in the public health field, and many of its activities and phases of organization have been both unique and far-reaching in their results. He was a firm advocate of organized medicine and often sought the advice and co-operation of both the state and county medical societies. He was a tireless and energetic worker, always willing to share success and honor with those who worked with him and under his direction. His slogan "Good personal health means good public health in any community" will long remain as a watchword in public health work.

The society joins with his many friends and confreres in extending its sympathy to his family in their great loss and sorrow.

* * *

Pittsburgh Medical Bulletin, June 28, 1941
(Allegheny County Medical Society)

News of the sudden death of John J. Shaw, M.D., of Philadelphia, has been received on all sides with expressions of regret over the great loss thus sustained by the Commonwealth of Pennsylvania. Since assuming the secretaryship of the Pennsylvania Department of Health in January, 1939, Dr. Shaw has constantly endeavored to improve and to popularize the true purposes of public health service. That great success has attended his personalized leadership we are sure will be attested by all with whom he worked "on the hill" at Harrisburg, by county and city health department associates throughout the state, and by hundreds of practicing physicians. His appeal to the people of Pennsylvania was oft repeated in the now familiar words, "Good personal health means good public health in any community."

Medical Society Notes, June 30, 1941
(Northumberland County Medical Society)

The death of Dr. John J. Shaw, State Secretary of Health, on June 24, is a severe loss to organized medicine in Pennsylvania, and to Dr. Shaw's many personal friends among the physicians of the state.

Dr. Shaw soon realized, after being appointed to Governor James' cabinet, the importance of co-operation with the Pennsylvania State Medical Society. He often met with the Board of Trustees of the State Medical Society and co-operated with them and other officers and committees of the State Department of Health, and the committees of the State Medical Society practically worked hand in hand. Such friendly co-operation accomplished many useful things which were of great benefit to the people of our state.

* * *

The Medical Bulletin, July, 1941
(Lycoming County Medical Society)

The sudden and untimely death of John J. Shaw, M.D., Secretary of Health of the Commonwealth of Pennsylvania, in Harrisburg on Tuesday, June 24, 1941, we learned with sorrow and regret.

Under his guidance the Department of Health of the Commonwealth has attained a high place throughout the country in the public health field, and many of its activities and phases of organization have been both unique and far-reaching in their results. He was a firm advocate of organized medicine and often sought the advice and co-operation of both the state and county medical societies. He was a tireless and energetic worker, always willing to share success and honor with those who worked with him and under his direction. His slogan "Good personal health means good public health in any community" will long remain as a watchword in public health work. The members of the Lycoming County Medical Society join with his many friends and confreres in extending their sympathy to his family in their great loss and sorrow.

THE PENNSYLVANIA MEDICAL JOURNAL

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EDITORIALS

MORALE IN SELECTIVE SERVICE EXAMINATIONS

The volunteer registration boards, which are so ably administering the Selective Service Plan for the Army, are rendering additionally yeoman service in the direction of prevention of mental illness, and in boosting the morale of the soldiers. Few people recognize how important an influence their own attitude may have on the man entering the armed service. This lad is to be moved rather suddenly out of a secure position, away from home and family, and thrust into an entirely new mode of existence among total strangers and with a completely new motive for accomplishment. The adjustment he makes to this change from his former small world is materially aided by the kindly human understanding of the men on the registration board with whom he first comes in contact. These board doctors are maintaining a splendid approach in the study of the men as individuals. Each is an independent unit unto himself with problems of his own, and if he is made to feel at once that he is moving into realms that are friendly, helpful, and reasonable, this of course reassures him, so that his primary state of apprehension is distinctly lessened.

The physician who first examines a prospective selectee and maintains toward him the attitude of a doctor toward a patient, with full concentration in relation to him alone, at once satisfies that young man that this is to be a job well done, and his confidence and enthusiasm gain impetus.

On the contrary, the specialists on the induction boards, who are seeing more than 200 men a day, may more readily become automatic and incline to see only the anatomic part under scrutiny, and thus overlook the man as a whole. However, it has been most satisfying to note that these specialists do maintain the complete perspective of the consultant and see their man in relation to the part examined, its effect upon him, and his total potentialities. Time and again, after passing through the hands of these 12 or more doctors on an Induction Board, recruits have voluntarily expressed their appreciation of the thoroughness of their examination and the personal interest of each examiner.

In many instances the men have been watching the process and the findings with intelligent interest, and several have been heard to remark that the original registration board doctor* found the same things and thus was as good as the specialists, and so from now on that man was to become their local family physician.

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* See page 1452 for short examination form helpful in evaluating potential risks from nervous and mental disorders.

From the standpoint of public health, the newly organized Pennsylvania Plan for the registration of the rejected men with the Department of Health for follow-up and treatment has great promise, and is under discussion in many states as an example of further development in this direction. An effort is made to return the man to his local physician with a full report of his disability; but if the latter is unable to carry out such a treatment method, the rejectee is directed to proper clinics, hospitals, or other suitable treatment facilities. This follow-up is particularly facilitated by the organizations which already exist state-wide for the efficient handling of cases of tuberculosis, venereal disease, psychoses and neuroses.

This effort for reclamation for purposes of general public health has not only helped the rejected man individually but has furthered his confidence in his state and federal government, and thus increased his interest and his loyalty to the nation; and to a large extent he has learned an appreciation of the medical profession which plans and carries out a constructive health program for him.

Let every physician examining enrollees for the nation feel fully content that, through the hours he has so generously donated to this patriotic service, he is carrying out a far-reaching function, far beyond the examination alone, and is spreading a stimulating confident influence among the men entering the service, and thus is aiding in the building of the morale of the armed forces as a whole. B. L. K.

STATESMANLIKE

The "editorial" dictionary defines a statesman as "one skilled in public affairs and the art of government." From other recognized sources we gather that a statesman "invents, foresees the future; reflects on what is past; makes early preparation" (Fenelon); and "breaks no promise, serves no private end, gains no title, loses no friend" (Pope). Having thus latterly qualified the dictionary man's more specific definition of a statesman, we now dare look about for evidences of, as well as opportunities for, medical statesmanship.

It was William R. Alger, a nineteenth century American clergyman, who defined "true statesmanship" as "the art of changing a nation from what it is into what it ought to be"; and from the vantage point of forty years' observation of the true physician's prominent part in changing this old world for the better, we have paraphrased Alger's definition to express the hopes and ambitions of the physicians of Pennsylvania: "Medical statesmanship comprises the art of changing the health condition of a community, county, or state from what it is to what it ought to be."

Are you at a loss, treasured reader, in calling to mind statesmanlike accomplishments of your own in your own community that qualify you as a medical statesman under the above definition? Then we refer you to the recorded minutes of your own county medical society or to the pages of your own Pennsylvania Medical Journal.

Therein you will find, not as statesmanship *per se* nor as serving any private end but rather as an obligation discharged, a thousand instances in which individually and in groups medical statesmen, foreseeing the future, have through three or four generations of Pennsylvanians pointed and led the way in becoming "more useful to the public in the prevention and management of disease and in prolonging and adding to the comfort of life"; in other words, changing for the better the health conditions of their neighbors.

Do the opportunities to manifest medical statesmanship grow fewer in number or less in perspective? The correct answer, we believe, is No; but the sequence leading to accomplishment of purpose may be more frequently clouded by the bumptious manner in which ambitious federal bureaus latterly have been attempting to adapt the statesman-like accomplishments of private medical research and clinical practice. To carry on successfully in spite of bureaucratic ineptitude requires of all medical statesmen only the additional qualification of intense patriotism —that which swallows slight or insult from politically controlled bureaucrats and continues onward in gratitude for that which our profession has been permitted to achieve or to enjoy in the days of the America many of us have known.

So, wherever it be in the line of service, whether in military or in private practice, on Selective Service boards or disease control committees, or in association with community health activities, physicians with the true professional spirit will continue, as always, to strive during these days when no one seems to know what may happen in or to our beloved country to withhold criticism even of political partisanship in health service except when they have constructive suggestions to make.

1395 TO 18,935

To the practicing physician who may think American industries find but few occasions to look to any but "plant" physicians to minimize the number of "days lost" from work on account of illness or injury among "employees," we submit the following, culled from the July, 1941, issue of *The Journal of the Michigan State Medical Society:*

"Dr. C. D. Selby, medical consultant for General Motors, told of the great dependence of the plant physician on the outside practitioner.

"He cited General Motors' figures for 187,000 hourly rated employees in 1940. There were 22,521 who were disabled during the year for periods in excess of 7 days.

"Of these, 1395 were disabled from occupational causes, and 18,935 because of ordinary non-occupational diseases or injuries.

"Greatest source of time lost in 1940, Dr. Selby said, was appendicitis in which 2197 cases lost 101,174 days. Influenza took 43,183 days and tonsillar infections 38,094 days.

"The ratio of days lost was one day for occupational disability to 300 days for non-occupational."

SUCCESSFUL MEETING ABOARD SHIP

The annual meeting of the Eighth Councilor District of The Medical Society of the State of Pennsylvania was held aboard the *S. S. South American* out of Erie, June 19, 1941, with the Erie County Medical Society as host and Trustee and Councilor Norbert D. Gannon, of Erie, presiding. The meeting and outing with 275 in attendance was highly successful.

Words of welcome were delivered by J. A. Merle Russell, president of the Erie County Society, who expressed his pleasure over the attendance which greatly exceeded that of the 1938 meeting held aboard the same boat.

Reports of various county societies in the district were next presented. Orel N. Chaffee made the report for Erie County, listing 5 deaths, 7 new members, 10 members in the army or navy service, and a total membership of 172.

McKean County was represented by Francis DeCaria, who reported a membership of 51 with 7 in the army or navy service.

James A. Biggins submitted the report for the Mercer County Medical Society in which he said that Mercer County had a membership of 87 with 4 in the nation's service.

Fifty lectures to civic and professional clubs were delivered by members of the Warren County Medical Society during the past year according to Hilding A. Bengs, who reported for that society. He reported a membership of 51 with 4 already in the army service. He reported for his membership the recent birth of 8 sons and daughters and the early promise of 5 more, terming this good medical defense.

Strangely, no county reported any particular disappointment with the state Selective Service examinations. All reported many and varied interesting scientific meetings, along with an active social program. One new woman's auxiliary, that of Crawford County, was organized.

The State Society was officially represented by its president, Francis F. Borzell, of Philadelphia, who briefly outlined and explained the preparedness development in Pennsylvania and the active part the physicians of the state played. He personally complimented Charles H. Henninger, of Pittsburgh, chairman of the Pennsylvania Committee on Medical Preparedness, for his great help in the new organization.

He told about the new trial setup in Pennsylvania of federal army examining stations, replacing the former so-called induction stations.

Dr. Borzell then brought up the problem of rehabilitation of rejectees and urged that the medical profession meet this challenge and offer some organized system of rehabilitation of these rejectees. He favors a careful analysis of the cause of these rejections—bring them out in the open and thereby counteract any false inferences.

As in the past, physicians having had 50 years in active practice were honored at this meeting, when Dr. Borzell presented certificates commemorating such service to Clayton C. Flatt, of Kinzua, and Ernest J. Kelley, of Chandlers Valley, both of Warren County.

The gratitude of William Mather Lewis, director of the State Selective Service, to the physicians of northwestern Pennsylvania was expressed by Edgar S. Everhart, of Harrisburg, medical director of the State Selective Service. He stated that many members of the county societies in the Eighth District are rendering a splendid patriotic service. The speaker paid especial compliment to Erie, first for removing the examination from the doctor's private office, and second, for establishing the smooth working group service now existing. Colonel Everhart favored, where possible, one examination only for each selectee.

The state official family was again represented by its secretary, Walter F. Donaldson, of Pittsburgh, who stated that this was his sixth councilor district meeting of the year, but his first aboard a boat. He was impressed by the great number of younger physicians aboard. This is a healthy sign. Dr. Donaldson spoke of the 1941 session of the A. M. A. where the recent A. M. A. trial was discussed. Would the adverse decision result in dissolution of the A. M. A.? Of course, the answer is "No." However, that depends upon the Fellows of the Association, upon hospital and clinic service, and upon public relations. The leaders of the profession have an increased responsibility, as well as the members. Every member of the medical profession now has a new individual responsibility to discharge: namely, better service, and in the true professional spirit.

While the secretary mentioned the A. M. A. trial, it was up to Daniel L. Borden, of Washington, D. C., president of the District of Columbia Medical Society, to give the real facts and high lights of this "trial of the century." Before starting, Dr. Borden extended greetings from the Medical Society of the District of Columbia. He then went into detail regarding abuses and travesty of justice during the trial. He told of the varying testimonies of the parties concerned; of the unfairness of many angles of the trial; of the exclusion of much important testimony; of the reactions of the court and then the jury's answer. He told of the limited newspaper publicity on the case.

In closing, Dr. Borden submitted several questions which were answered as well as could be anticipated. Does the case, if appeal is not successful, mean socialization of medicine? Does it mean medical service on some prepayment plan? Does it mean government control of medicine? Does it mean the dissolution of the A. M. A.? Does it mean governmental control of the A. M. A.? These are all questions for physicians to study and ponder over. Dr. Borden's entire presentation was indeed a finished product.

Following the meeting, dinner was served. Later dancing was enjoyed and then a show by the ship's crew was thoroughly appreciated. This was followed by dancing and a midnight buffet lunch, closing one of the finest meetings and outings ever held in the Eighth Councilor District.

The Third Corps Area of the United States Army was represented by Col. Don G. Hildrup, Surgeon General's Office, Baltimore, and Col. John B. Richardson, Adjutant General's Office, Baltimore, also Capt. Charles H. Bloom, of Altoona, of the Federal Army Examining Station.

The fifth annual meeting of the Woman's Auxiliary of the Eighth Councilor District of The Medical Society of the State of Pennsylvania was held aboard the Great Lakes liner, *S. S. South American,* June 19, 1941, with Mrs. James H. Delaney, councilor, presiding and a very large attendance present.

Mrs. Maxwell Lick, of Erie, president of the Woman's Auxiliary of The Medical Society of the State of Pennsylvania, cordially welcomed the representatives of all counties and their guests.

Reports of the year's accomplishments and endeavors were heard from Warren, Mercer, Erie, and Crawford counties. Thanks to the councilor, this is the first year for the Crawford County to report, as its auxiliary was just recently organized and is now flourishing. Mrs. Quay A. McCune reported for the Warren County Auxiliary; Mrs. Delaney read the report of Mrs. Nelson J. Bailey for Mercer County; Mrs. Frank J. Theuerkauf reported for Erie County; and Mrs. John M. Kinnunen reported for Crawford County. These reports show that the auxiliaries of the district are very active. Special applause was given Warren County for having the largest delegation of visitors, and to Crawford County, the baby of the district.

A message of regret and good wishes from Mrs. Charles C. Crouse, of Greensburg, president-elect of tthe Woman's Auxiliary of The Medical Society of the State of Pennsylvania, was read.

Francis F. Borzell, president of The Medical Society of the State of Pennsylvania, the guest speaker, talked of the aims and purposes of the auxiliary in relation to the state medical society. He stressed the importance of realization of the difficulties ahead and the need for readiness and preparedness to cope with future problems.

Distinguished guests included Mrs. Walter F. Donaldson, past president of the State Auxiliary; Mrs. Maxwell Lick, president of this auxiliary; and Mrs. James D. Stark, chairman of the Public Relations Committee of the State Auxiliary.

The meeting adjourned, all later enjoying dancing, dinner, and entertainment by the ship's crew.

THE READING MATTER IN YOUR WAITING ROOM

The medical profession has been made intensely aware in recent years of the hard drive by certain minority groups to foist socialized medicine upon the American way of life. In the attempt to mold public opinion, physicians at times have been pictured as avaricious, thoroughly selfish, and without care for the public welfare. Statistics have been brought forward in an attempt to prove that medical care is antiquated, incompetent, and inadequate. We are told again and again that sizable sections of our population cannot secure the services of a physician when they need him but that if the country will but accept socialized medicine all our medical troubles will be over. Many such articles have appeared in popular magazines and on the tables of the very physicians who were attacked.

Physicians know that they are not soulless, that, in fact, they have real concern for the public's welfare, but it is well for them to give the public reminders of that fact. Such concern has been manifested in their advocacy of vaccination against smallpox and typhoid fever, in their insistence on the isolation of contagious diseases, and in their support of every measure that assures better health for the people and less income for themselves.

The public should be better informed of the great advances in medical education during the past generation, of the high standardization of hospital services, of the millions of dollars of free medical service freely donated by the profession to the needy, and of the many medical discoveries of recent years that are constantly bringing more and more diseases under control. They should be informed that socialized medicine has proven a failure where it has been adopted, that under it public health becomes worse, and that for an incompetent system of medical service the cost to them as taxpayers would be exorbitant.

Such information may be secured in printed form for the waiting room. *Hygeia* gives some of it, The Medical Society of the State of New York has booklets on socialized medicine, and there are other sources in and out of organized medicine that give facts on medical practice and medical economics. Keeping such facts available for patients to read while awaiting their turns might do much toward combating undesirable propaganda.—*The Weekly Roster and Medical Digest.*

FACTS ARE COMFORTING

Of 17,540 men, ages 21 to 36, in New York City, examined for military duty, only 126, or less than three-fourths of one per cent, had syphilis.

* * *

The American Academy of Pediatrics is sponsoring an active national campaign to protect infants and children from contact infections from servants. Routine physical examinations including a roentgen-ray and blood test, given to all home employees, are advised by the academy to prevent those too frequent cases of tuberculosis and other infectious diseases traced to a household employee.

Ninety-First Annual Session

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Hotel William Penn, Pittsburgh, October 6, 7, 8, 9, 1941

Featuring Round-Table Conferences—Question and Answer Periods

INVITATION

The officers and members of The Medical Society of the State of Pennsylvania cordially invite all physicians, residents of Pennsylvania and of adjacent states* who are members of, or are eligible to membership in, a county medical society, to attend the scientific sessions of their Ninety-first Annual Meeting. **There is no fee for registration.** Hotel accommodations are ample in the headquarters hotel and near-by hotels.

Concerning the thousands of practicing physicians included in the scope of this invitation it is probably reasonable to state that few of them have attended scientific programs during July, August, and September of the current year. **What better opportunity, then, for graduate study** at the end of a ninety-day rest from medical meetings could be offered than the comprehensive scientific sessions and exhibits extending throughout the four-day period, Monday, Tuesday, Wednesday, and Thursday, October 6, 7, 8, and 9, of the convention of the Medical Society of the Keystone State?

THREE MORNING GENERAL ASSEMBLIES

(Note periods devoted to round-table conferences)

EIGHT SCIENTIFIC SECTIONS—118 ESSAYISTS

MEDICINE—SURGERY—EYE, EAR, NOSE AND THROAT DISEASES
DERMATOLOGY—UROLOGY—OBSTETRICS AND GYNECOLOGY
PEDIATRICS—CLINICAL LABORATORY MEDICINE

Sixteen Out-of-State Guest Speakers

Louis A. Brunsting, Rochester, Minn.	*"The Sulfonamide Drugs in Dermatology."*
Samuel W. Clausen, Rochester, N. Y.	*"Prevention and Treatment of Vitamin Deficiencies in Children."*
Joseph A. Johnston, Detroit, Mich.	*"The Physical Aspect of the Adolescent Period."*
Meredith F. Campbell, New York City.	*"Urinary Obstruction in Infants and Children."*
Charles A. Waters, Baltimore, Md.	*"Has Preoperative Irradiation a Place in the Treatment of Renal Tumors?"*
Albert M. Snell, Rochester, Minn.	*"Changing Conceptions of Portal Cirrhosis."*
Maximilian A. Goldzieher, New York City.	*"Diagnosis and Treatment of Pituitary Disorders."*
James L. Reycraft, Cleveland, Ohio.	*"Diagnosis and Treatment of Placenta Praevia."*
Virgil S. Counseller, Rochester, Minn.	*"The Influence of Infection on Abdominal Hysterectomy."*
Edward S. Welles, Saranac Lake, N. Y.	*"Surgery in the Presence of Pulmonary Tuberculosis."*
Leland S. McKittrick, Boston, Mass.	*"Surgery in the Presence of Diabetes."*
William Mather Lewis, Selective Service Director, State of Pennsylvania.	*"Medical Choice of Selectees—From the Viewpoint of the Pennsylvania Selective Service Board."*
William L. Benedict, M.D., Rochester, Minn.	*"The Surgical Treatment of Glaucoma."*
Thomas C. Galloway, M.D., Evanston, Ill.	*"Upper Respiratory Tract Obstructions and Their Secondary Effects."*
Charles Gordon Heyd, New York City.	*"Common Errors in Selection of Patients for Surgery."*
Edward J. Stieglitz, Bethesda, Md.	*"Problems of the Aging."*
Charles A. Doan, Columbus, Ohio.	*"The More Common Blood Dyscrasias—Their Diagnosis and Treatment."*

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* Many Ohio, West Virginia, and Maryland physicians expected.

The Superlative Scientific Exhibit. To those who are not fortunate enough to have attended the 1941 convention of the American Medical Association at Cleveland, Ohio, but who have heard or read so much about the attractive, instructional characteristics of its tremendous scientific exhibit, can be promised at Pittsburgh, in October, a replica embodying fifty exhibits covering everything helpful in diagnosis and treatment, from laboratory procedures to clinical demonstrations. Research will be featured, short lectures, sound motion pictures, all in a quiet, restful atmosphere in the center of which will be found the State Medical Society's Library Service for its members.

The All-Inclusive Technical Exhibit, prepared by approximately one hundred of the nation's leading purveyors of medical, surgical, diagnostic, and therapeutic apparatus, facilities, preparations, and publications—in a word, the newest as well as the more stabilized in the up-to-date physician's armamentarium.

PREVIEW OF SCIENTIFIC PROGRAM

THREE MORNING GENERAL ASSEMBLIES

Tuesday, Wednesday, Thursday

(Followed by Round-Table Conferences on Wednesday and Thursday)

Tuesday, 9:30-10:30 a.m.—Urban Room

Medical Choice of Military Selectees*

Stating the Problem.

Charles H. Henninger, Pittsburgh, *Chairman,* Pennsylvania Medical Preparedness Committee.

From the Viewpoint of the Local Registration Boards.*

Gerald S. Backenstoe, Emmaus.

From the Viewpoint of the Pennsylvania Selective Service Board.

William Mather Lewis, Selective Service Director for Pennsylvania.

From the Viewpoint of the National Selective Service Board.*

Lt. Col. Leonard G. Rowntree, *Chief,* National Selective Service System, Washington, D. C.

10:30-11:00 a.m.

Question and Answer Period conducted by Director Lewis.

11:00 a.m.

Emotion and Body Changes.

Ira A. Darling, Torrance.

Sedatives—Their Use and Abuse.

Elliott B. Edie, Uniontown.

Common Errors in Selection of Patients for Surgery.

Charles Gordon Heyd, New York City.

GENERAL ASSEMBLIES

Wednesday, 9:30 a.m.—Urban Room

Diagnosis of Symptoms and Treatment of the Unconscious Patient.

D. Ray Murdock, Greensburg.

Interpretation of Abdominal Pain.

George P. Muller, Philadelphia.

Problems of Aging.

Edward J. Stieglitz, Bethesda, Md.

Round-Table Conferences

The success of round-table conferences may be measured by audience interest reflected by questions asked and comments made.

Wednesday, 11:00 a.m.-12:30 p.m.

INFECTIOUS DISEASES: Meningitis; Pneumonia; Influenza; Measles; Scarlet Fever—Urban Room

Charles L. Brown, Philadelphia, *Chairman,* assisted by Verner B. Callomon and Robert R. MacDonald, Pittsburgh; Waldo E. Nelson and Pascal F. Lucchesi, Philadelphia; Thomas St. Clair, Latrobe.

OFFICE GYNECOLOGY—Silver Room

Joseph A. Hepp, Pittsburgh, *Chairman,* assisted by Lewis C. Scheffey, Philadelphia; Walter J. Larkin, Scranton; David B. Ludwig, Pittsburgh.

PROBLEMS OF AGING—Forum Room

Edward L. Bortz, Philadelphia, *Chairman,* assisted by Edward J. Stieglitz, Bethesda, Md.; Roy R. Snowden, Pittsburgh; Laurrie D. Sargent, Washington; Roland N. Klemmer, Lancaster.

GENERAL ASSEMBLIES

Thursday, 9:30 a.m.—Urban Room

Arterial Hypotension.

Thomas M. Durant, Philadelphia.

Advances in Treatment of Arthritis.

Harry M. Margolis, Pittsburgh.

The More Common Blood Dyscrasias—Their Diagnosis and Treatment.

Charles A. Doan, Columbus, Ohio.

Round-Table Conferences

The success of round-table conferences may be measured by audience interest reflected by questions asked and comments made.

Thursday, 11:00 a.m.-12:30 p.m.

CHEMOTHERAPY—Urban Room

Hobart A. Reimann, Philadelphia, *Chairman,* assisted by John L. Atlee, Jr., Lancaster; John P. Scott, Philadelphia; Paul Gross, Pittsburgh.

TREATMENT OF WOUNDS—Silver Room

John P. Griffith, Pittsburgh, *Chairman,* assisted by William L. Estes, Jr., Bethlehem; Gilson C. Engel, Philadelphia.

BLOOD DYSCRASIAS—Forum Room

George J. Kastlin, Pittsburgh, *Chairman,* assisted by Charles A. Doan, Columbus, Ohio; Maud L. Menten, Pittsburgh; Thomas Fitz-Hugh, Jr., Leandro M. Tocantins, Philadelphia.

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* Represented in Scientific Exhibit.

OTHER TUESDAY AND WEDNESDAY MORNING PROGRAMS

Dermatology—Silver Room

Tuesday, 9: 00 a. m.

The Management of Scabies.
John W. Barr and Warren F. White, Johnstown.

The Diagnosis and Treatment of Seborrheic Dermatitis.
Frederick Amshel, Pittsburgh.

Vitamin A—Effect in Pityriasis Rubra Pilaris and Keratosis Follicularis.
Mashel F. Pettler, Beaver Falls.

The Sulfonamide Drugs in Dermatology.
Louis A. Brunsting, Rochester, Minn.

Evaluation of Cryotherapy in Treatment of Acne Scars.
Lester Hollander, Pittsburgh, and Joseph M. Shelton, Washington.

The Rôle of Biopsies in Dermatology.
Jacques P. Guequierre and Fred D. Weidman, Philadelphia.

Contact Dermatitis.
Meyer W. Rubenstein, Pittsburgh.

Clinical Laboratory Medicine
Parlors 1 and 2

Tuesday, 9: 30 a. m.

Banti's Disease—Its Etiology and the Rationale of Splenectomy.
Louisa E. Keasbey, Lancaster.

The Relation of Hormones to the Development of Cancer.
Willard S. Hastings, Philadelphia.

Intern Laboratory Education in the General Hospital.
Harman H. Van Horn, Harrisburg.

Food Aspiration Pneumonia.*
George H. Fetterman and Thomas J. Moran, Pittsburgh.

The Evaluation of Triple Serologic Tests for Syphilis (Mazzini Test, Hinton Test, Kolmer-Wassermann Test).
Laurence C. Milstead, Allentown.

The Influence of Extraneous Factors on the Sedimentation Rate of Erythrocytes.
William P. Belk, Wynnewood.

The Relationship Between Blood Cholesterol, Sugar Tolerance, and Basal Metabolism Rate in Thyroid Disease.
Krikor Yardumian and Norman M. Wall, Pittsburgh.

Pathology Among Institutionalized Psychotics.
Thomas K. Rathmell and Marshall M. Lieber, Sharon.

Urology—Forum Room

Tuesday, 9: 00 a. m.

Introductory Remarks.
Robert L. Anderson, Pittsburgh, *Chairman of Section.*

Double Primary Malignancies.
Isaac L. Ohlman, Pittsburgh.

Pathology and Treatment of Renal Tumors.
Alfred A. Bothe, Philadelphia.

Surgical Treatment of Renal Tumors,
Elmer Hess, Erie.

Diagnosis and Treatment of Primary Ureteral Tumors.
Samuel L. Grossman, Harrisburg.

Twenty Years' Experience with Bladder Tumors.
Edward J. McCague and George H. Strong, Pittsburgh.

Urology—Club Floor Parlor

Wednesday, 9: 30 a. m.

Nonspecific Urethritis. John D. Denny, Columbia.

Fertility in the Male.*
Henry K. Sangree, Philadelphia.

Early Recognition of Pathology in the Genito-urinary Tract of Children.
Henry T. Price, Pittsburgh.

Urinary Obstruction in Infants and Children.
Meredith F. Campbell, New York City.

AFTERNOON SECTION PROGRAMS

Tuesday, 2: 00 p. m.

Medicine—Urban Room

Symposium on Gastro-intestinal Diseases

Oral and Cutaneous Manifestations of Vitamin Deficiency. Thomas E. Machella, Philadelphia.

Weil's Disease.
David W. Kramer, Philadelphia.

Vitamin Deficiencies in Gastro-intestinal Disease.*
Thomas W. McCreary, Monaca, and George J. Kastlin, Pittsburgh.

Clinical Significance of the X-ray Reports of Defect in the Duodenal Cap.
Cortlandt W. W. Elkin, Pittsburgh.

The Importance of Gastroscopy in Differentiating Gastric Lesions.
C. Wilmer Wirts, Jr., Philadelphia.

The Management of Idiopathic Ulcerative Colitis.
Kendall A. Elsom, Philadelphia.

Changing Conceptions of Portal Cirrhosis.
Albert M. Snell, Rochester, Minn.

Surgery—Cardinal Room

Unusual Fractures Involving the Ankle Joints.
Lewis C. Manges, Jr., Philadelphia.

The Use of Sulfonamides in the Local Treatment of Severe Burns of the Body Surface.
Jonathan E. Rhoads, Philadelphia.

Skull Fractures and Associated Injuries to the Brain.
Dudley P. Walker, Bethlehem.

The Treatment of Compound Fractures.
Calvin M. Smyth, Jr., Philadelphia.

Treatment of Compound Fractures Involving Joints.
J. Walter Levering, Philadelphia.

Mental Side of Trauma.
George J. Wright, Pittsburgh.

Injuries to the Spine.
John H. Alexander, Pittsburgh.

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* Represented in Scientific Exhibit.

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Pediatrics—Silver Room

Treating the Colicky Infant.
John M. Higgins, Sayre.

Feeding the Sick Child.
Elizabeth Kirk Rose, Philadelphia.

Treatment of the Epileptic Child.
D. Stewart Polk, Rosemont.

The Intestinal Manifestations of Milk Allergy in the Newborn Period.
Mitchell I. Rubin, Philadelphia.

Prevention and Treatment of Vitamin Deficiencies in Children.
Samuel W. Clausen, Rochester, N. Y.

The Diagnosis of Giardia Intestinalis Infestation by Means of Intestinal Intubation; the Treatment with Atabrine and Follow-Up Studies of Sixty Cases. Elizabeth P. Maris, Philadelphia.

Pseudohemophilic Diatheses.
Theodore O. Elterich, Pittsburgh, and Charles F. Elterich, Washington.

Obstetrics and Gynecology—Forum Room

Breast Carcinoma Complicating Pregnancy.
Howard A. Power, Pittsburgh.

Experience with Vinethene as an Obstetric Anesthetic.
William F. Hartman, Lancaster.

Simultaneous Multiple Primary Malignant Tumors.
Bender Z. Cashman, and Mortimer Cohen, Pittsburgh.

Late Postpartum Complications.
George N. Ballentine, Williamsport.

Further Observations on the Significance of Nutritional Deficiency in Pregnancy.
Winslow T. Tompkins, Philadelphia.

Evaluation of the Metranoikter in the Treatment of Dysmenorrhea. S. Leon Israel, Philadelphia.

The Diagnosis and Treatment of Placenta Praevia.
James L. Reycraft, Cleveland, Ohio.

Clinical Laboratory Medicine
Parlors 1 and 2

Roentgen Irradiation in the Treatment of Inflammations.
Eugene P. Pendergrass and Philip J. Hodes, Philadelphia.

Has Preoperative Irradiation a Place in the Treatment of Renal Tumors?
Charles A. Waters, Baltimore, Md.

The Significance of Calcification Within the Gallbladder. Solomon P. Perry, Sayre.

The Renal Digestive Reflex, Its Practical Application to Some Clinical Problems.
William E. Reiley, Clearfield.

Late Changes in Irradiated Skin.
Donald C. Gordon, Scranton.

Wednesday, 2:00 p. m.

Medicine—Urban Room

Symposium on Heart Diseases

The Differential Diagnosis of Angina Pectoris.
Charles C. Wolferth and Joseph Edeiken, Philadelphia.

The Differential Diagnosis of Dyspnea.
Frank J. Gregg, Pittsburgh.

Rheumatic Pericarditis.
J. Max Lichty, Pittsburgh.

Some of the Present Methods of Treating Cardiac Arrhythmias.
Thomas M. McMillan and Samuel Bellet, Philadelphia.

The Use of Digitalis.
Andrew B. Fuller, Pittsburgh.

The Clinical Value of Heart Sound Tracings with the Electrocardiogram.*
Adolphus Koenig and Ellis W. Young, Pittsburgh.

Painless Myocardial Infarction.
William D. Stroud, Joseph A. Wagner, and Morris W. Stroud, Jr.

Surgery—Cardinal Room

Goiter. Verne G. Burden, Philadelphia.

Problems in Surgical Diseases of the Large Bowel.
Donald C. Geist, Philadelphia.

Abscess About the Liver.*
Clifford Lee Wilmoth, Pittsburgh.

Acute Appendicitis in Children.
J. Montgomery Deaver, Philadelphia.

Acute and Chronic Perforations of the Gallbladder.
Robert L. Schaeffer, Allentown.

Anesthetics.
Lester M. Morrison and William A. Swalm, Philadelphia.

Report on 10,000 Pentothal Sodium Anesthetics.
George J. Thomas, Pittsburgh.

Surgery in the Presence of Pulmonary Tuberculosis.
Edward S. Welles, Saranac Lake, N. Y.

Eye, Ear, Nose, and Throat Diseases
Forum Room

Recent Improvements in the Treatment of Retinal Separation. Harvey E. Thorpe, Pittsburgh.

Recent Advances in Cataract Surgery.
Luther C. Peter, Philadelphia.

The Analysis of Fundus Pathology by Photographs.*
George H. Shuman and Charles F. Kutscher, Pittsburgh.

The Surgical Treatment of Glaucoma.
William L. Benedict, Rochester, Minn.

Pediatrics—Silver Room

Scarlet Fever Immunizations of School Children.
J. Hart Toland, Philadelphia.

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* Represented in Scientific Exhibit.

Toxin Immunization Against Scarlet Fever.
Maud L. Menten, Pittsburgh.

Allergic Reactions with the New Refined Scarlet Fever Antitoxin. Joseph S. Baird, Pittsburgh.

Limitations in the Control of Communicable Infections.
J. Moore Campbell, Harrisburg.

The Physical Aspect of the Adolescent Period.
Joseph A. Johnston, Detroit, Mich.

Sulfathiazole Therapy in the Pneumonias of Infancy and Childhood, with Special Attention to the Blood Picture and a Comparison with the Therapeutic Effect of Sulfapyridine.
Horst Albert Agerty, Merion.

The Treatment of Otitis Media in Children.
James Warren Hershberger, Martinsburg.

Obstetrics and Gynecology
Club Floor Parlor

Ovarian Tumors Complicating Pregnancy.
R. Charles Nucci, Pittsburgh.

Supravesical Extraperitoneal Cesarean Section; Results in a Series of Cases Operated on by the Waters' Technic.
Josiah R. Eisaman and Bruce R. Austin, Pittsburgh.

Vaccination During Pregnancy.
J. Bernard Bernstine, Philadelphia.

Report of an Experiment in the Control of Cancer of the Uterus.*
Catharine Macfarlane, Margaret C. Sturgis, and Faith S. Fetterman, Philadelphia.

Rupture of the Gravid Uterus at or Near Term.
John H. Dugger, Philadelphia.

The Influence of Infection on Abdominal Hysterectomy.
Virgil S. Counseller, Rochester, Minn.

Thursday, 1:30 p.m.

Medicine—Urban Room

Symposium on Endocrines

Laboratory Evaluation of the Endocrines in Health and Disease. Olive Hoffman, Philadelphia.

Endocrine Glands and Their Relation to Diabetes.
John A. Daugherty, Harrisburg.

Clinical and Laboratory Observations of the Subcutaneous Implantation of Pellets of Testosterone in Cases of Eunuchoidism.*
Robert C. Grauer, Pittsburgh.

The Rôle of the Adrenals in Health and Disease.*
Julius M. Rogoff, Pittsburgh.

The Male Sex Hormone.
Charles William Dunn, Philadelphia.

Diagnosis and Treatment of Pituitary Disorders.
Max A. Goldzieher, New York City.

Surgery—Cardinal Room

Pulmonary Suppuration Complicating Diabetes Mellitus. Harry R. Decker, Pittsburgh.

The Surgical Treatment of Osteo-arthritis.
Paul H. Harmon, Sayre.

Surgery in the Aged. Raymond L. Evans, Sayre.

Transplantation and Regeneration of Tissue.*
Hans May, Philadelphia.

Soft Tissue Repair. Kerwin M. Marcks, Emmaus.

Treatment of Recurrent Symptoms Secondary to Previous Operations on the Gallbladder and Biliary Ducts. An Analysis of 140 Patients Requiring Secondary Operations. Harold L. Foss, Danville.

Surgery in the Presence of Diabetes.
Leland S. McKittrick, Boston, Mass.

Eye, Ear, Nose, and Throat Diseases
Forum Room

Malignancy of the Nasal Accessory Sinuses.
Nelson S. Weinberger, Sayre.

Chemotherapy in Upper Respiratory Tract Infections.
Francis W. Davison, Danville.

The Use of Silver Picrate in Sinus Infections.
Leon Felderman, Philadelphia.

Indications for Tonsillectomy.
George M. Coates and William Gordon, Philadelphia.

Upper Respiratory Tract Obstructions and Their Secondary Effects.
Thomas C. Galloway, Evanston, Ill.

Inaugural Meeting

As usual, the inaugural address by the incoming president, followed by an hour of popular entertainment, will be featured at the Inaugural Meeting to be held on Tuesday evening in the Carnegie Music Hall. The formal program beginning at 8:15 p.m. will be preceded by a half hour's organ recital. This evening meeting is open to all members and registered guests. Tickets of admission will be distributed at the time of registering on the seventeenth floor of the Hotel William Penn.

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* Represented in Scientific Exhibit.

* Represented in Scientific Exhibit.

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The Medical Society of the State of Pennsylvania

October 6 to 9, 1941, Pittsburgh, Pa.

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(Very large room, with bath—four single beds to a room, $1.50 per person; five or six to a room, $1.25 per person.)

TUBERCULOSIS ABSTRACTS

A Review for Physicians

PREPARED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Published through the co-operation of the Pennsylvania Tuberculosis Society and The Medical Society of the State of Pennsylvania

FINDINGS in an extensive tuberculosis survey in Chicago schools, using the tuberculin test as a screen, are now available. While it is not a new conclusion that routine skin testing in elementary school groups is not an economical procedure, the report does contribute materially to our knowledge of the epidemiology of tuberculosis and permits comparison with previous surveys in the same city.

TUBERCULIN TESTING IN CHICAGO SCHOOLS

This survey was carried out by the Chicago Municipal Sanitarium, aided by the Tuberculosis Institute of Chicago and Cook County.

The survey policy of the Municipal Tuberculosis Sanitarium had hitherto been largely oriented toward older groups. Tuberculin-testing in the schools, therefore, represented a deviation from established policy and was undertaken in order to explore educational values, morbidity rates, and case-finding potentialities of a follow-up of the reactors and to check on existent case-finding machinery.

As the purpose was to obtain a cross-section of tuberculosis morbidity, the survey attempted to include every Chicago school. However, it was necessary to sacrifice certain ambitions, such as a 100 per cent consent and a thorough survey of each school. In a general way, the policy ran, "Get what consents you can in the time allotted and go on to the next school."

Kindergarten, first-grade and eighth-grade children, and all available students in the high schools were examined because a positive reaction in a kindergarten or first-grade child might have some epidemiologic significance; eighth-grade children were on the threshold of adolescence and many would not go to high school. Thus it might be their last chance of inclusion in a case-finding effort. In view of the many studies already made, justifiability of high school examination was hardly debatable.

First, the Board of Education notified the principals. Then the nurse addressed the teachers and children in each room. All were given appropriate literature which, with the consent card, the children took home. After due interval the operating team did the tuberculin test and results were read in 48 hours.

In all, 176,878 consents were obtained in 561 public elementary schools, 115 public high schools, 347 parochial elementary schools, 47 parochial high schools, 12 trade and vocational schools, and 5 junior colleges.

A self-contained and complete mobile unit, the first as far as is known to be used in the x-ray field, was devised. On starting work the truck drove into the school yard and the technician selected a location as near as possible to space for extra dressing rooms. Current was obtained through a cable from a school connection.

The procedure, carefully standardized, was to give a single Mantoux test using Purified Protein Derivative in an amount one-tenth the usual final dose. The percentage of reactors with this dose was low compared with the experience in other urban areas, so the injection unit was doubled in the latter part of the work, except in the case of Negroes and Mexicans who had shown marked sensitivity to tuberculin.

In the 167,345 children tested, 27,401 proved positive. To Mar. 1, 1940, 23,532 had been x-rayed and 218 cases of reinfection-type tuberculosis were found, of whom 109, or 50 per cent, were in the moderately or far-advanced stage; in 4524 children, evidence of primary infection-type tuberculosis was found.

The reactor rate and the primary tuberculosis rate was practically the same for boys and girls, but the incidence of reinfection-type tuberculosis was twice as high in girls. The incidence of disease among children x-rayed was higher in Negroes and Mexicans, but not to the same degree as the infection rate. The Negro children had slightly less primary tuberculosis than the white.

The study seemed to bear out the reports of other workers who found a lack of constant correlation between tuberculin sensitivity and tuberculous calcifications.

In comparison with other metropolitan surveys, the reaction incidence in Chicago is low. This may be due to the fact that no open case may live in the same home with children under age 16. Contact is broken as soon as possible after discovery of the case.

Survey results confined to a district or a constellation of districts would lead to false conclusions. The survey included schools in every district and children from every economic level. The major part of the tuberculosis problem is sharply localized. About 4 of the 75 census districts account for 38 per cent of the deaths. Mortality in these areas is much higher than the general rate, namely, 196 per 100,000 as compared to 51.6 per 100,000 for the city as a whole. Morbidity figures run low in the same ratio.

In Chicago, as elsewhere, decreasing mortality rates probably exerted influence on the composition of the infection index. The rate has fallen from 147.9 per 100,000 in 1917 to 51.6 per 100,000 in 1939. Over the same period, the rate has fallen from 133.9 to 34.0 for whites and from 414.0 to 281.7 for Negroes, per 100,000.

In an attempt to estimate the diminution of the reactor rate, the present figures may be compared to older studies, one made by Webb of the University of Chicago in 1930-31, the other by Novak and Kruglick of the Tuberculosis Institute of Chicago and Cook County in 1933-37. Webb tested no high school children and Novak and Kruglick tested no elementary school children. In elementary school ages, comparing Webb's figures with the present study, since 1930-31 there has been a definite drop for each age period. Comparing high school tests for 1933-37 and 1936-39, there is also a substantial drop for each age period, except for age 20; only 29 students of this age were tested in the Novak study.

The specific relation between tuberculin positives and tuberculosis in the home was clearly demonstrated in the present survey. The source of infection was unmistakably established in 3284 instances, but of these only 226 were new pulmonary cases.

The comparatively small number of new cases found in the families of the positive reactors was both a disappointment and a satisfaction. A larger proportion of new tuberculosis had been anticipated, but it was encouraging to know that the existent case-finding machinery was effective, since in 90 per cent of the cases the source of infection was already under supervision.

Altogether, 586 new cases of tuberculosis were found. The total cost chargeable to the survey for the 586 cases found was $511.95 per case.

In order to explore its potentialities, figuratively speaking, the miniature x-ray was carried almost to the doorstep of the people in the congested areas. The equipment was hooked up to the mobile x-ray truck and this self-contained unit, including dressing rooms, was taken to various locations.

The plan, still operative, aims to make an x-ray examination of every man, woman, and child in certain areas of gross congestion, high tuberculosis mortality, and low economic status.

In the school survey, lasting 3 years and comprising 23,532 x-ray examinations, 218 new cases were found on the first film. In the miniature x-ray survey comprising 20,956 examinations and lasting 5 months, 675 new cases were found by the original x-ray.

Summary

During the 3-year period, 167,345 children were tuberculin-tested and 23,532 x-rayed. The reactor incidence was 7.04 per cent for kindergarten and first grade, 19.82 per cent for eighth grade, 21.29 per cent for high school students, and 29.97 per cent for miscellaneous schools and colleges. The rate for Negroes was twice that of whites and for Mexicans it was still higher.

This study shows a substantial drop in the reactor rate in Chicago as compared with older studies. The city-wide survey emphasized the fact that each district had its own reactor rate which was allied to local mortality rates.

Of 57,481 children under age 12 tested with tuberculin, 9 cases of pulmonary disease were found, which is comparable to figures for this age group in the mortality tables. Facts point toward the adolescent and early adult years as the case-finding provinces. In testing adults in highly infected milieus (60 per cent reactions or more), x-ray of the entire group is cheaper than tuberculin-testing with x-ray of the positives.

Bulletin, Chicago Municipal Sanitarium, Vols. 18-19-20, Years 1938-39-40, 1-12, inc.

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, *Secretary*
8104 Jenkins Arcade
Pittsburgh, Pa.

Medical Statesmanship Comprises the Art of Changing the Health Condition of a Community, County, or State From What It Is to What It Ought to Be

PROPOSED AMENDMENTS

The following proposed amendments to the constitution and by-laws of The Medical Society of the State of Pennsylvania are herewith republished, and will appear again in the September JOURNAL.

Proposed Amendments to Constitution

An amendment offered by the Blair County Medical Society to Article VIII, Section 1, of the Constitution of The Medical Society of the State of Pennsylvania, would delete the words "12 trustees who are also councilors," substituting the words *"and for each councilor district of the state, one trustee and one councilor."*

An amendment offered by the Luzerne County Medical Society and received by the secretary on May 1, 1941, proposes that the second paragraph of Section 1, Article IV, of the constitution be deleted. The second paragraph reads as follows:

Physicians, otherwise qualified, who have taken their first citizenship papers, shall be eligible to membership. This membership is conditional upon the completion of citizenship within 6 years of the granting of first papers. Failure to comply with this provision will automatically terminate membership.

If the second paragraph is deleted, "Article IV—Membership" would then read as follows:

The membership of this society shall consist of citizens of the United States, members in good standing in the component county medical societies, and whose annual assessments in this society have been paid. This, however, shall not be construed to exclude from active membership any physician who may occupy a teaching position with any college or university within this state.

Proposed Amendment to By-Laws

The action of the Blair County Medical Society also contemplates the following addition to Chapter 3, Section 5, of the by-laws:

"At the councilor district meeting preceding the annual meeting of the State Society, whenever a trustee or a councilor for that councilor district is to be elected, the members of the councilor district present shall forward to the House of Delegates a nomination for trustee and for councilor."

NO DOUBLE TAX

In the Officers' Department of the April JOURNAL we discussed the alleged possibility that the Federal Internal Revenue Department might see fit to collect an income tax on cash receipts in connection with professional services rendered by a locum tenens for a brother physician absent in military service; that is, collect a tax on the total net collections of the locum tenens and again on the percentage of the receipts turned over to the absent physician.

In the light of this, it is comforting to learn from a recent issue of the *Journal of the New York State Medical Society* that the Committee on Medical Preparedness of that society is in receipt of a decision from the Internal Revenue Department on the subject of income taxes. It is to the effect that the cash income received from the patients of physicians absent in military service will not be thus taxed twice.

If any Pennsylvania physician, however, remains in doubt, we again refer to the agreements approved by the legal counselor of The Medical Society of the State of Pennsylvania covering in legal form arrangements to be made between physicians entering military service and physicians serving as their locum tenens. (See April, 1941, PENNSYLVANIA MEDICAL JOURNAL, page 917.)

TIMES DYNAMIC—PROBLEMS STATIC

JOURNAL readers should look forward with interest to hearing the ninetieth annual address by the incoming president of The Medical Society of the State of Pennsylvania. The time, the place, and the occasion will be Tuesday evening, Oct. 7, at 9 p. m., at the inaugural meeting in Carnegie Music Hall, Pittsburgh.

We do not know the characteristics of the address which is being prepared by President-elect Lewis T. Buckman except that it will be timely, fearless, and truly patriotic. Undoubtedly it will to some degree touch upon similar topics discussed in the state medical society's *first president's address.* This was delivered at the society's second annual meeting held in Reading on Apr. 11, 1849, by President Samuel Humes of Lancaster.

Dr. Humes, familiarly enough, "congratulated the members upon the numbers and respectability of the anniversary meeting. It showed the determination of the profession to place itself on an elevated position. Further appeals to legislative halls were futile, as 40 years of trial had shown. Insult had been added to indifference. At one period a salutary bill had been passed, but the Governor had vetoed it, fearing the influence of charlatans when he presented himself for re-election." Apparently retaining some faith in the legislature, resolutions were adopted to secure by legislation the registration of births, marriages, and deaths. . . . "A committee was appointed upon a Medical Beneficiary Fund." Representation in the House of Delegates was on the basis of one delegate for every 5 members of a component society.

The inauguration of the society's ninety-first president at Pittsburgh in 1941 will be followed by an hour's entertainment such as was enjoyed on Tuesday night in Philadelphia, in 1940, at the Academy of Music, and in Pittsburgh in 1939. Tickets of admission will be distributed in due time to members of the society and their friends.

THE 1941 ROSTER

The Annual Roster of the membership of The Medical Society of the State of Pennsylvania corrected to July 1, 1941, is now available to any member of the society who may desire a copy. It contains the listed names and addresses, county by county, of the active members in good standing as of July 1, 1941, and of the 253 affiliate members who are relieved of the payment of county and state medical society dues. The names of the 163 members who have died since July 1, 1940, are also listed.

The 1941 Roster will list, county by county, the names of our State Society members who have been ordered to active duty in the United States Army or Navy, giving their rank and present location. Other pertinent information to be found in the Roster includes the officers and committee personnel for the current year of the 60 component county medical societies as well as of the state society, the names of the presidents and secretaries of the state society since its organization in 1848, and the annual meeting places of the society with the registered attendance of members at each session.

To receive a copy of the Roster, write to the office of The Pennsylvania Medical Journal, 230 State Street, Harrisburg, or to the Secretary, 8104 Jenkins Arcade, Pittsburgh.

1941 SECTION ON DERMATOLOGY

The Section on Dermatology will present a diversified program at Pittsburgh, which will be equally interesting to the general practitioner and the specialist.

Seven papers have been prepared, including the very interesting topic, "The Sulfonamide Drugs in Dermatology," by the guest essayist, Dr. Louis A. Brunsting of the Mayo Clinic, Rochester, Minn. Dr. Brunsting's paper will cover the systemic and localized effects, the value of which has been proven on a large list of skin lesions.

Drs. John W. Barr and Warren F. White, of Johnstown, will discuss a very common and important subject, "The Management of Scabies," giving helpful hints on diagnosis and treatment.

This paper is to be followed by "The Diagnosis and Treatment of Seborrheic Dermatitis" by Dr. Frederick Amshel, of Pittsburgh. This paper will refer mainly to etiology, description of the eruption, and treatment.

The vitamin group is becoming more and more important in the treatment of all diseases, and Dr. Mashel F. Pettler, of Beaver Falls, will show the value of "Vitamin A—Its Effect in Pityriasis Rubra Pilaris and Keratosis Follicularis." These follicular dermatoses, though not rare, are not too common, and when encountered cause the attending physician no little difficulty in successful management.

The resulting disfiguring scars from acne vulgaris are a constant worry to both patient and practitioner, and Dr. Lester Hollander, of Pittsburgh, with Dr. Joseph M. Shelton, of Washington, will give their results in the treatment of these scars in their paper on "Evaluation of Cryotherapy in the Treatment of Acne Scars." This method comprises the topical application of a slush made from carbon dioxide snow, acetone, and precipitated sulphur.

The knowledge of microscopic pathology is often necessary to insure a true diagnosis, as well as to wisely predict the result of treatment, and Drs. Jacques P. Guequierre and Fred D. Weidman, of Philadelphia, will review their years of experience in microscopic pathology in their paper on "The Rôle of Biopsies in Dermatology."

A paper on "Contact Dermatitis" by Dr. Meyer W. Rubenstein, of Pittsburgh, concludes the section program. The incidence of dermatoses due to contact, susceptibility, and allergy is definitely on the increase; therefore, in this period of great industrial activity, a discussion of the irritating agents which may produce eruptions and the management of these conditions make this a very timely and important subject.

1941 SECTION ON UROLOGY

The Urologic Section will have a program on Tuesday, Oct. 7, beginning at 9 a. m., comprised of papers on tumors involving the urinary tract. The papers and the discussions will be offered by men of exceptional experience.

On Wednesday, Oct. 8, beginning at 9:30 a. m., following a paper and discussion on "Nonspecific Urethritis," there will be a paper on "Urology in Children" by a prominent pediatrician from our own state. The guest speaker, Meredith F. Campbell, M.D., professor of urology at the New York College of Medicine, will present a paper on "Urinary Obstruction in Children."

NATIONAL YOUTH ADMINISTRATION (NYA) HEALTH SERVICE IN PENNSYLVANIA

To Presidents, Secretaries, Editors of Component County Medical Societies, and Chairmen of Committees on Public Relations and Medical Economics.

Since the Feb. 4, 1941, regular meeting of the Board of Trustees of The Medical Society of the State of Pennsylvania, the Committee on Medical Economics of our society has had under consideration the plans proposed by the National Youth Administration (NYA) for the establishment and maintenance in Pennsylvania of health examinations and health service for Pennsylvania clients of the NYA.

The objectives of this program, which is part of a nation-wide program as set forth by the NYA, are briefly outlined in Exhibit A subjoined.

On Mar. 12, 1941, the Executive Committee of the Board of Trustees (later approved by the board) and the Committee on Medical Economics of The Medical Society of the State of Pennsylvania approved the proposed NYA plan in principle.

The Committee on Medical Economics during their studies of this program met twice (Mar. 12 and May 22) in conference with representatives of the National NYA, with Dr. William E. Robertson and other representatives of the Pennsylvania Division of the NYA, and with officers of the MSSP and representatives of its Board of Trustees.

The final meeting of the Medical Economics Committee (June 9) resulted in their report dated June 17, which has met with the approval of the Board of Trustees and includes the following specific items for the guidance of the component county medical societies of the MSSP:

Examination Centers.—Prominent in the plan submitted by the NYA was the division of the State of Pennsylvania into 9 examination districts and centers, each comprising varying numbers of counties. See Exhibit B subjoined.

Regarding the proposal for centers, the approved report of the Medical Economics Committee states: "The NYA has evidently contemplated dividing the State of Pennsylvania into 9 districts, making their concentration points insofar as possible close to defense industries. The plan calls for concentration of youth (in dormitory) in training centers, and examining them at such centers. This committee feels that, since these young people come from all of the counties represented in an NYA district, it would be perfectly proper to set up *examining* centers in the respective counties from which the youth would be drawn, and that such examining centers could operate just as effectively as the larger centers arbitrarily chosen by the NYA."

The final recommendation of the committee was as follows:

"This committee disapproves of the 9 districts as outlined by the NYA *for medical examination purposes.* This committee disapproves of examining centers in such districts, but *does not disapprove* of examining centers in component counties where practicable."

Further, the committee is very definite in its advice "That enrollees from each county be examined in that county with full opportunity for the physicians in that county who wish to participate in the program to be enrolled as examining physicians."

County Medical Society NYA Advisory Committees.—The Medical Economics Committee believing that "county NYA committees would be more representative of the component county medical societies than a state society NYA committee which would centralize authority in a possibly undesirable manner," the committee's report definitely recommends "that as soon as possible *each* component county medical society *set up an NYA committee* to work with the NYA district administration."

Remuneration of Physicians.—Concerning remuneration of physicians for professional services rendered, the committee, commenting that since fees proposed by the NYA vary in the various states, are decisive in their recommendation that "the hourly compensation for physicians in Pennsylvania participating in this program be equivalent to the maximum paid in any other state. (At the present time the physicians in Indiana receive $4.00 per hour.)"

Corrective Treatments.—The Medical Economics Committee advocated frequent conferences between representatives of county medical societies with county or district representatives of the NYA and advocated that where corrective treatment is to be given, based on findings during the physical examination program, the component medical societies involved should arrange for and direct the necessary treatment, as well as arrange for adequate compensation for such corrective service.

A copy of these recommendations is being sent to Dr. William E. Robertson, state health consultant of the NYA, 500 S. Front St., Harrisburg, with the request that as soon as possible he forward to the secretary of each component society two copies of the *Preliminary Manual of Health Procedure* as issued from the Washington, D. C., office of the National Youth Administration. Attention of those interested is drawn to a discussion of the NYA Health proposals appearing on page 2511 of the May 31 issue of the *Journal of the American Medical Association.*

The members of the Medical Economics Committee of The Medical Society of the State of Pennsylvania are Drs. Kenneth S. Scott, chairman, Oakbourne; Hilding A. Bengs, Warren; George R. Harris, Pittsburgh; Frederick O. Zillessen, Easton; James H. Corwin, Washington; William R. Davies, Scranton; Frank Lehman, Bristol; LaRue M. Hoffman, Williamsport; and James F. Schell, Philadelphia.

WALTER F. DONALDSON, *Secretary.*

June 30, 1941.

EXHIBIT A

Objectives of Program

The proposed National Youth Administration (NYA) health program in Pennsylvania is part of a nation-wide health program being carried on by the NYA for youth enrolled with that organization. The co-sponsor of the project in Pennsylvania is the State Department of Health. The program is designed to prepare young people for jobs in private employment and to make it possible for them to obtain training in various fields through which they can become self-supporting.

To be a part of the NYA out-of-school program, the youth must be: (1) out of school, (2) unemployed, (3) between the ages of 18 and 25, or high school graduates of 17, (4) citizens of the United States, (5) in need of employment.

The objectives of the NYA health program, as set forth in official statements issued by the NYA, are as follows:

> "(a) A physical appraisal, by means of a technically competent health examination, of every youth assigned to the NYA out-of-school work program.
>
> "(b) Correction of health defects through maximum utilization of community resources, through the use of supplementary medical and dental services provided where possible by the National Youth Administration, and through developing in youth an interest in improving their health by their own personal efforts.
>
> "(c) To give improved technical advice and assistance with respect to all NYA efforts having a direct and immediate bearing on the health of youth workers, such as nutrition, sanitation, physical development, and recreation."

The Federal Security Agency of the National Youth Administration for Pennsylvania is located at 500 South Front Street, Harrisburg. Dr. William Egbert Robertson, recently president of the Philadelphia County Medical Society, is the state health consultant for the National Youth Administration.

EXHIBIT B

Counties Comprising the 9 Proposed Districts of Pennsylvania as Outlined by the NYA for Medical Examination Purposes

1. Delaware, Montgomery, Philadelphia (Examining Center—Philadelphia).
2. Berks, Bucks, Lehigh, Monroe, Northampton (Examining Center—Allentown).
3. Lackawanna, Pike, Susquehanna, Wayne, Wyoming (Examining Center—Scranton).
4. Carbon, Columbia, Luzerne, Schuylkill (Examining Center—Wilkes-Barre).
5. Adams, Chester, Cumberland, Dauphin, Franklin, Fulton, Lancaster, Lebanon, Perry, York (Examining Center—Harrisburg).
6. Bradford, Cameron, Centre, Clinton, Huntingdon, Juniata, Lycoming, Mifflin, Montour, Northumberland, Snyder, Sullivan, Potter, Tioga, Union (Examining Center—Sunbury).
7. Bedford, Blair, Cambria, Clearfield, Elk, Indiana, Jefferson, Somerset (Examining Center—Johnstown).
8. Armstrong, Beaver, Butler, Clarion, Crawford, Erie, Forest, Lawrence, Mercer, McKean, Venango, Warren (Examining Center—New Castle).
9. Allegheny, Fayette, Greene, Washington, Westmoreland (Examining Center—Pittsburgh).

IN TRIBUTE

HONORABLE ARTHUR H. JAMES,
Governor of Pennsylvania,
Harrisburg, Pa.

YOUR EXCELLENCY:

I have just completed a manuscript for the tribute to Dr. John J. Shaw to appear in the August issue of *Pennsylvania's Health.*

It has been my pleasure and privilege as president of The Medical Society of the State of Pennsylvania to be in intimate contact with him. I learned to love him and to admire his integrity of purpose.

One of the outstanding characteristics of his all too short career as Secretary of Health was his success in cementing the friendship of the medical profession of the state to his department. The result of this achievement has been that he succeeded in developing a public health program that is outstanding. It has attracted admiration and compliments throughout the Nation.

May I officially express to you the grief of the medical profession in his loss. We lost a friend when we lost Dr. Shaw.

At the same time, we are keenly aware of the invaluable services he has rendered Pennsylvania as well as the medical profession. What we have gained from Dr. Shaw is not measured in terms of selfish interests but in the sensitization of the profession to its peculiar responsibilities as an integral part of the public health machinery in Pennsylvania.

It is neither politic nor desirable on our part to make any suggestion to you as to who his successor shall be, nor shall I presume to speak for my organization. I believe, however, that I voice the sentiments of the twelve thousand physicians in Pennsylvania, when I venture to express the hope that whoever succeeds Dr. Shaw will be prepared to carry forward the policies he has so successfully established.

We believe he has pioneered in the field of public health in its relationship to the medical profession and health education, and that Pennsylvania bids fair to lead all other states if the policies adopted by Dr. Shaw are continued.

My personal services as well as those of The Medical Society of the State of Pennsylvania are still at your command, as they have been throughout your administration.

Respectfully yours,
FRANCIS F. BORZELL, M.D., *President,*
The Medical Society of the State of Pennsylvania.

July 5, 1941.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to June 30:

New (23) and Reinstated (3) Members

ALLEGHENY COUNTY (Pittsburgh)

Richard A. Caldwell
Ernest H. Gibbs
George F. Kowallis
Lillian W. Worton

BLAIR COUNTY

Julius Bloom .... Altoona

BRADFORD COUNTY

Axel K. Olsen .... Sayre

BUTLER COUNTY

Calvin W. Standen .... Mars

CUMBERLAND COUNTY

(Reinstated) Irwin W. McConnell.

DELAWARE COUNTY

Samuel G. Smith .... Darby

LACKAWANNA COUNTY

Gregorio Catalano .... Dunmore

LANCASTER COUNTY

Howard G. Eisenberg .... Bowmansville

MONTGOMERY COUNTY

Morris A. Bowie .... Bryn Mawr
(R) Herbert H. Herskovitz.

MONTOUR COUNTY

Clyde H. Jacobs .... Danville

PHILADELPHIA COUNTY (Philadelphia)

Samuel A. Bolosky
Rotan Lee
Jefferson N. Richardson
Charles Rupp, Jr.

SCHUYLKILL COUNTY

Ralph Lyons .... Cressona
Allen Wesley Hildreth .... Pottsville

VENANGO COUNTY

Edith E. L. Worrall .... Polk

WARREN COUNTY

Paul George Fago .... Youngsville

WASHINGTON COUNTY

John K. McCarrell .... Hickory
Philip A. Ley .... Donora
(R) George R. Geeseman.

WESTMORELAND COUNTY

Angelo L. Pantalone .... Export

Removals (14), Resignations (1), Transfers (1), Deaths (10)

ALLEGHENY: *Removals*—Frederick I. Battaglia from McKeesport to Hughesville (Lycoming Co.); Edward T. Davis, Jr., from Pittsburgh to Rochester (Beaver Co.); Philip G. Leavy from Pittsburgh to Charleston, S. C. *Resignation*—William H. Flickinger, N. Braddock. *Deaths*—John W. Dixon, Wilkinsburg (Univ. Pa. '87), June 12, aged 69; William W. Sturgis, Glenshaw (Jeff. Med. Coll. '87), June 5, aged 89; William M. Woodward, McKeesport (Univ. Pa. '91), June 17, aged 76.

CAMBRIA: *Removal*—Myer H. Tolochko from New Florence to Johnstown. *Death*—Olin G. A. Barker, Johnstown (Univ. Pa. '98), May 28, aged 69.

DELAWARE: *Removals*—Rolfe Harvey from Media to Ardmore; Harry C. Valentine from Marcus Hook to Glen Mills.

LANCASTER: *Removal*—Louis Altman from Lancaster to Greensburg (Westmoreland Co.).

LUZERNE: *Death*—J. Alan Corson, Wilkes-Barre (Jeff. Med. Coll. '21), May 25, aged 47.

LYCOMING: *Death*—Howard M. Ritter, Williamsport (Jeff. Med. Coll. '95), June 1, aged 71.

MERCER: *Removal*—Leo T. McKee from Sharon to St. Marys (Elk Co.).

NORTHAMPTON: *Death*—Tyrus E. Swan, Easton (Kentucky Sch. Med. '89), June 5, aged 80.

PHILADELPHIA: *Removals*—Harold F. Bishop from New York to Atlanta, Ga.; Thomas A. Campbell from Reading to Philadelphia; Worth B. Forman from Philadelphia to Buckhannon, W. Va. *Deaths*—Ruth Alexander, Los Angeles, Calif. (Woman's Med. Coll., Phila., '09), Jan. 18, aged 53; Milton K. Rosen, Philadelphia (Hahnemann Med. Coll. '39), June 12, aged 27; John J. Shaw, Philadelphia (Univ. Pa. '08), June 24, aged 58.

VENANGO: *Removal*—Talcott Wainwright from Oil City to Moscow (Lackawanna Co.).

WASHINGTON: *Removal*—Howard D. Kuhns from California to Elwyn (Delaware Co.).

YORK: *Transfer*—William J. Hutchison, Harrisburg, from Dauphin County Society.

Net gain in membership during June 15

A SYLLABUS FOR A REFRESHER COURSE IN INDUSTRIAL HEALTH

For County Medical Societies or Postgraduate Seminars

SPONSORED BY THE
COMMITTEE ON INDUSTRIAL HEALTH
OF
THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

LECTURE I

Historic and Legal Aspects of Industrial Health

Historic (Optional).

1. Ellenbog.
2. Ramazzini.
3. German group.
4. English group.
5. American group.

A. *Definitions of Fields of Industrial Hygiene and Industrial Medicine.*

B. *Laws Basic to Industrial Medical Practice.*

1. First Workmen's Compensation Law adopted 1915. Changes since. Present status—(Pennsylvania Medical Journal, May, 1941).
2. Occupational Disease Law—present status—(Pennsylvania Medical Journal, May, 1941).
3. Responsibility of physician under these laws to:
    a. The employee.
    b. The employer.
    c. The state.
    d. Each other.
4. Responsibility of employer under these laws.
5. Responsibility of employee under these laws.

C. *Functions of Physician within the Factory.*

1. Supervise plant sanitation.
2. Supervise physical health of workers by
    a. Pre-employment examinations, to place men in proper jobs.
    b. Routine yearly or biennial health examinations—oftener for hazardous jobs.
    c. Physical examinations for transfer.
    d. Physical examination on return from illness to work.
3. Therapy—strictly limited to care of injuries or illnesses required by compensation or occupational disease laws; temporary care of minor, nonoccupational ailments or first aid in nonoccupational emergencies.
4. Rehabilitation of injured or ill workers.
5. Health instruction within the plant.
6. Maintaining complete medical records.
7. Leading or doing research.

LECTURE II

Problem of Supply and Demand in Industrial Medical Care

A. *Large Industries* (only 8 per cent Pennsylvania concerns have 100 or more employees).

1. Majority already equipped with physicians and nurses.
2. Cite local example of large industry with well-run medical department.

B. *Small Industries* (92 per cent Pennsylvania concerns have less than 100 employees).

1. *Problem of supplying adequate medical care.*
    a. These plants now almost completely without physician, nurse, or trained first-aid personnel.
    b. Supplying adequate health supervision for employees is an economic impossibility for the small factory owner single-handed.
    c. Urgent need for general practitioners with training in industrial medicine as logical agents to meet the medical needs of small industries.
2. *Present Methods of Supplying Medical Service to Small Industries.*
    a. "Friendship" method. Physician acquaintance is approached by industrialist for full or part-time service to plant employees.
    b. "Solicitation" method. Physician approaches industrialist for above purpose.
    c. "Pressure" method. City, county, or state division of industrial hygiene forces employer to seek services of physician.
    d. "Educational" method. Organized medicine approaches employers and employees in groups to foster demand for at least part-time service to all industry.
3. *Agencies Now Dealing with Problems of Industrial Health.*
    a. *Council on Industrial Health, American Medical Association,* maintains bulletin service and liaison between state medical societies.
    b. *Committees on Industrial Health* in certain state medical societies. Outstanding work in Connecticut, California, Wisconsin, and Pennsylvania.
    c. *Committee on Industrial Health,* National Association of Manufacturers—formerly active, now quiescent.
    d. Certain state manufacturers' associations' *committee on industrial health*—notably Connecticut.
    e. *Bureaus of Industrial Hygiene,* in either State Department of Health or State Department of Labor—notably New York, Connecticut, Massachusetts, Pennsylvania, Virginia, Wisconsin, and California.
    f. *Division of Industrial Hygiene*—National Institute of Health, Bethesda, Md.

LECTURE III

The Nonoccupational Factors Affecting Industrial Health

I. *The Extent of General Ill Health in the State.*
    A. Principal causes of illness.
    B. Congenital and acquired physical defects.
    C. Mental defects.

II. *The Influence of Heredity.*

III. *The Nutritional Factor.*
    A. Adequate "energy-value" diet for differing occupations.
    B. Diet and exercise.
    C. Relative percentage of income spent on food by various working groups.
    D. Adequacy or inadequacy of foods chosen to provide proper nutrition.
    E. Malnutrition among workers.
    F. Effects of between-meal feedings on nutrition and fatigue.

- IV. *Economic and Environmental Factors.*
  - A. American standard of living.
  - B. Minimum family income required to maintain this standard, as compared to actual working incomes.
  - C. Unemployment.
  - D. Housing.
  - E. Comparison of urban and rural environmental influence on health.
- V. *Summary of Effects of Heredity, Nutrition, Economic and Environmental Factors on Health of Working Population.*

LECTURE IV

The Occupational Factors Influencing Industrial Health

- I. *Hygienic or Engineering.*
  - A. Influence of outdoor or indoor work.
  - B. Influence of dusty atmosphere.
  - C. Influence of exposure to high or low temperatures or varying relative humidities.
  - D. Influence of fumes and gases.
  - E. Aviation diseases.
    - 1. Influence of high altitudes.
    - 2. Influence of rapid flight and rapid descent.
    - 3. Aeroneurosis and aeropsychosis.
- II. *Medical.*
  - A. *Accidents:* Mortality.
    - Morbidity.
    - Relation of psychologic and fatigue factors.
    - Safety programs and methods for reduction.
  - B. *Diseases:*
    - 1. Dermatoses.
    - 2. Lead poisoning.
    - 3. Silicosis.
    - 4. Exposure to toxic gases or liquids.
    - 5. Effect of organic dusts.
    - 6. Cancer of the skin.
    - 7. Anthrax.
    - 8. Chrome ulceration (heavy metal poisoning).
    - 9. X-ray and radium effects.

LECTURE V

Impact of Industrial Health on American Production Potential

- I. *Lost Time Due to:*
  - A. Accidents.
  - B. Industrial diseases.
  - C. Nonindustrial accidents and illnesses.
- II. *Factory Management Problems Arising from Operation of these Factors:*
  - A. Amount of lost production.
  - B. Amount of material spoiled by unskilled substitutes.
  - C. Amount of wages lost by employees.
  - D. Mutual benefit payments to employees.
  - E. Insurance costs.
- III. *Responsibility of Entire Medical Profession to Prevent Operation of These Factors By:*
  - A. Co-operation with plant engineers to prevent accident and disease hazards.
  - B. Co-operation with each other to restore injured worker to production promptly.
  - C. Special rôle of general practitioner to return nonindustrially ill employee to function as quickly as possible.

LECTURE VI

Methods for Maintaining and Improving Health Among Working People

The master word is *education*

- I. *Education of the Physician*
  - A. To appreciate the size of the field.
  - B. To appreciate his responsibility for it.
  - C. To act as consultant and educational guide for all other interested parties.
- II. *Education of the Employee*
  - A. In the use of preventive devices and measures to avoid industrial accidents and illnesses.
  - B. In the understanding of proper nutrition, rest, and exercise in relation to improving general health.
  - C. In understanding the character and economic value to himself of medical services offered outside and inside the working place.
- III. *Education of the Employer*
  - A. To reduce production and material losses by fostering good medical care within the plant. "Good industrial health is good business."
  - B. To use co-operating medical and engineering facilities in meeting industrial hazards to health before they arise.

Final Summary: Restatement of aims of industrial medicine, with emphasis on the increasingly important rôle of the general practitioner of medicine in attaining these aims.

HELPFUL BIBLIOGRAPHY

1. *Industrial Medicine,* Clark and Drinker, National Medical Book Co., Inc., New York, 1935.

2. *Industrial Hygiene,* Lanza & Goldberg, Oxford University Press, New York, 1939.

3. *Health in Relation to Occupation,* H. A. Vernon, Oxford Medical Publications, London and New York, 1939.

4. *Public Health Bulletin 259,* United States Public Health Service, 1940.

5. *Public Health Reports,* Vol. 49, Sept. 21, 1934.

6. *Protecting Plant Manpower,* Special Bulletin No. 3, United States Department of Labor, 1941.

7. *Industrial Medicine*—issued monthly—official publication of American Association of Industrial Physicians and Surgeons, Chicago, Ill.

8. *Occupational Diseases of the Skin,* Schwartz & Tulipan, Lea & Febiger, 1939.

PAYMENT OF PER-CAPITA ASSESSMENT

The following payment of per-capita assessment has been received since May 31. Figures in first column indicate county society numbers; second column, State Society numbers:

June 2	Cambria	176–177	8841	$10.00
	Lackawanna	254	8842	10.00
4	Venango	54	8843	10.00
5	Bradford	40–42	8844–8846	30.00
	Lancaster	200	8847	10.00
	Washington	133–135	8848–8850	30.00
7	Montgomery	263–265	8851–8853	30.00
	Montgomery	*140, 141, 161, 190, 225, 247	8854–8859	60.00
12	Blair	109	8860	10.00
	Clinton	19	8861	10.00
13	Lycoming	118	8862	10.00
	Delaware	250–251	8863–8864	15.00
16	Philadelphia	2386–2420	8865–8899	345.00
	Lackawanna	255–256	8900–8901	20.00
	Washington	136–139	8902–8905	35.00
17	Cumberland	37	8906	10.00
	Cumberland	(1940)	9204	10.00
18	Montour	33	8907	10.00
	Luzerne	341	8908	10.00
19	Greene	26	8909	10.00
	Lycoming	119	8910	10.00
23	Bedford	14	8911	10.00
24	Schuylkill	155–161	8912	10.00
	Butler	62–67	8913–8918	60.00
26	Bradford	43–44	8919–8920	20.00
28	Venango	55	8921	10.00

LIBRARY NEWS

Members desiring to borrow reprints from the library should send 25 cents in stamps to cover the postage and part of the expense of collecting the material. Address the Librarian, 230 State Street, Harrisburg, Pa. Each package may be kept for a period of 14 days.

Borrowers between June 1 and July 1 were:

John V. McAninch, McDonald—*High Blood Pressure* (18 articles).

Alexander W. Seygal, Harrisburg—*Sterility* (30 articles).

Daniel Maloney, Meadville—*Hypertrophy of the Thymus* (28 articles).

Glenn V. Brown, Harrisburg—*Water Pollution* (4 articles).

Amleto Acquaviva, New Castle—*Varicose Veins* (30 articles).

J. Moore Campbell, Harrisburg—*Diabetes Mellitus* (8 articles).

Donald C. Geist, Philadelphia—*Medical Libraries* (10 articles).

Dale C. Stahle, Harrisburg—*Therapy of Pneumonia* (17 articles).

Herman Hirsh, Harrisburg—*Wassermann Reaction* (11 articles).

Walter P. Bitner, Harrisburg—*Intravenous Injections* (9 articles).

John D. Greaves, New Alexandria—*Therapy of Burns* (20 articles).

W. Baird Stuart, Carlisle—*Hydatiform Mole of the Uterus* (17 articles).

Irvin W. McConnell, Carlisle—*Tumors of the Placenta* (11 articles).

Maurice Marmelstein, New York—*Absence of Eyes* (4 articles).

H. H. Ackerman, Harrisburg—*Radiology* (12 articles).

Robert Denison, Harrisburg—*Lymphogranuloma* (14 articles).

R. S. Lukee, Pittsburgh—*Public Health* (1 article).

George R. Williamson, Mt. Lebanon—*Angioneurotic Edema* (16 articles).

George S. Enfield, Bedford—*Physiology* (1 book).

Lois M. Merkel, Sharon—*Leukemia* (28 articles).

Jesse L. Lenker, Harrisburg—*High Blood Pressure* (18 articles).

J. Max Lichty, Pittsburgh—*Cardiac Complications of Rheumatic Fever* (9 articles).

Harry Lapp, Reading—*Coccidioides* (1 article).

William J. Hutchison, Harrisburg—*Motility of the Diaphragm* (3 articles).

Dale C. Stahle, Harrisburg—*Pneumococcic Meningitis* (35 articles).

Howard R. Rarig, Berwick—*Hemorrhoidectomy* (3 articles).

Claude W. Ashley, Bloomsburg—*Tonsils and Adenoids* (29 articles).

CONTRIBUTIONS TO MEDICAL BENEVOLENCE FUND

The Committee on Medical Benevolence makes grateful acknowledgment of the following contributions to the fund:

Woman's Auxiliary, Butler County Medical Society	$25.00
Woman's Auxiliary, Warren County Medical Society	32.00
Woman's Auxiliary, York County Medical Society	175.00
Woman's Auxiliary, Montgomery County Medical Society	300.00
Woman's Auxiliary, Dauphin County Medical Society	150.00
Woman's Auxiliary, Chester County Medical Society	100.00
Total contributions since 1940 report	$4415.80

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* Exempt account military service; dues paid by county society.

Deaths from Selected Causes in Pennsylvania, April, 1941

County	All Causes, Excluding Stillbirths	Still-births	Infant Deaths	Maternal Deaths	Cancer	Intra-cranial Lesions of Vascular Origin	Heart Disease	Nephritis	Pneu-monia	Tuber-culosis
Adams	40	1	2	0	5	5	13	4	2	1
Allegheny *	1293	54	88	8	160	90	381	106	72	45
Armstrong	40	4	6	0	2	2	13	4	1	1
Beaver	119	12	12	0	12	10	29	11	5	4
Bedford	27	3	4	0	8	4	2	6	0	0
Berks *	225	5	16	2	27	20	81	7	7	7
Blair	115	5	7	2	14	10	37	11	3	4
Bradford	57	2	6	0	5	12	17	4	3	0
Bucks	87	0	3	0	14	12	32	6	1	3
Butler	65	4	3	1	8	6	21	1	3	3
Cambria *	175	16	24	1	25	14	38	14	8	0
Cameron	4	0	0	0	0	0	0	0	0	0
Carbon	48	2	1	0	7	1	18	5	2	1
Centre	49	1	7	0	5	5	19	2	2	0
Chester *	125	2	8	0	4	12	42	15	4	3
Clarion	24	1	0	0	1	4	10	1	0	0
Clearfield	70	5	8	1	3	10	22	4	2	0
Clinton	22	2	5	0	3	4	4	1	2	1
Columbia	40	3	2	0	1	4	12	3	2	3
Crawford	64	3	3	0	7	7	23	4	3	1
Cumberland	86	0	7	6	15	6	21	6	4	1
Dauphin *	189	13	16	0	22	12	62	23	10	5
Delaware	196	11	14	0	25	23	64	11	7	3
Elk	25	0	2	0	2	1	7	3	1	1
Erie	168	12	16	0	14	21	51	8	5	11
Fayette	151	9	18	0	17	13	36	11	10	5
Forest	5	0	0	0	0	0	1	0	0	0
Franklin *	57	2	4	0	8	7	18	8	3	1
Fulton	11	1	1	0	2	1	6	0	0	0
Greene	36	4	4	0	7	1	4	4	0	0
Huntingdon	30	1	1	0	5	4	9	1	0	0
Indiana	58	2	2	0	6	5	24	3	0	0
Jefferson	49	2	0	0	9	6	15	3	0	2
Juniata	11	0	2	0	0	0	3	1	2	1
Lackawanna	280	12	24	3	30	20	75	21	13	13
Lancaster	194	9	12	0	16	24	69	12	3	9
Lawrence	77	5	6	0	9	7	20	5	3	3
Lebanon	73	1	2	0	11	11	17	14	0	1
Lehigh *	182	6	11	1	20	20	50	12	7	6
Luzerne	392	15	33	1	37	23	123	36	12	11
Lycoming	116	4	6	0	9	14	39	4	8	1
McKean	40	2	1	0	8	3	10	3	1	2
Mercer	88	3	7	0	9	7	26	4	5	3
Mifflin	41	4	4	0	1	9	13	4	5	1
Monroe	32	0	2	0	3	5	12	2	1	0
Montgomery *	253	10	15	1	31	25	82	17	6	16
Montour *	27	1	2	0	0	0	13	0	3	2
Northampton	132	6	4	1	19	7	54	7	2	3
Northumberland	107	4	8	0	9	11	41	11	2	2
Perry	19	1	1	0	3	0	7	3	1	1
Philadelphia *	1959	37	88	10	260	141	672	149	77	103
Pike	9	0	0	0	1	1	3	1	0	0
Potter	15	1	1	0	1	3	4	3	0	0
Schuylkill	261	14	16	0	23	18	73	21	15	12
Snyder *	14	0	0	0	0	2	5	4	1	0
Somerset	75	3	12	1	6	6	13	5	4	4
Sullivan	2	0	0	0	0	0	2	0	0	0
Susquehanna	33	0	2	0	1	6	13	1	1	2
Tioga	44	2	2	0	4	4	19	4	1	3
Union	18	0	2	0	4	1	5	0	0	2
Venango *	40	2	2	0	6	8	8	2	1	0
Warren *	37	0	5	0	3	4	11	1	0	0
Washington	151	9	14	1	16	20	40	2	10	3
Wayne *	23	3	1	0	2	3	7	0	0	0
Westmoreland *	215	20	17	3	20	29	60	27	9	0
Wyoming	8	1	0	0	2	0	3	0	0	0
York	169	4	16	0	24	16	47	15	4	3
State and federal institutions	184	0	0	0	7	4	44	12	14	58
State total	9071	361	608	37	1038	784	2815	693	373	371

* Exclusive of deaths occurring in state and federal institutions except general hospitals.

One of a series of advertisements published by Parke, Davis & Co. in behalf of the medical profession. This "See Your Doctor" campaign is running in the *Saturday Evening Post* and other leading magazines.

Private Smith reports for Sick Call

Private Tom Smith is feeling a little under the weather.

If he were back in civilian life, the chances are he'd say, "I'll be all right in a little while," and he'd show up for work as usual.

But in this man's Army of ours, a soldier who feels below par is required to report for "Sick Call," even if he thinks there's nothing much wrong. Private Tom Smith is simply obeying orders.

Because of this wise institution known as "Sick Call," our Army doctors have an opportunity to combat illnesses at the very start and are usually able to prevent them from edging over into the danger zone. This is one of the reasons why the standard of health in our Army of 1941 sets an all-time high.

In this there is a valuable lesson for many a civilian . . .

We're thinking now of the man who permits himself . . . and his family . . . to run risks which no soldier is allowed to take. We're thinking of the man who says, "If I don't feel better tomorrow, I'll see the doctor." But will he? And when he does, will it be too late? Too late to prevent a serious illness, or too late to gain the advantage of time in treating a disease already contracted.

So why not establish the "Sick Call" system in your household? Stomach ache, you know, is sometimes the first warning of appendicitis; a sore throat may be the forerunner of a condition which requires expert attention. When you, or any of your family, develop even a seemingly minor ailment, don't waste time which may be precious.

Call your doctor, and let *him* decide whether or not the ailment is trivial—and what should be done about it. He knows—you don't. Report for "Sick Call" promptly

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SEVENTY FIVE YEARS OF SERVICE TO MEDICINE AND PHARMACY

PARKE, DAVIS & COMPANY
Detroit, Michigan
The World's Largest Makers of Pharmaceutical and Biological Products
SEE YOUR DOCTOR

COUNTY SOCIETY REPORTS

MONTGOMERY

June 4, 1941

The regular meeting was held at Norristown with an attendance of 34. The by-laws were amended providing that a member dropped for nonpayment of dues who wished to be reinstated would have to be re-elected in the usual way.

The speaker was Abraham J. Cohen, director of Eagleville Sanatorium for Tuberculosis. His subject was **"Chronic Hematogenous Dissemination Tuberculosis."** He said in part: This type of pulmonary tuberculosis is not only a mode of spread of that disease but it is also a distinct clinical entity that has been observed for many years, chiefly in Europe. As its name implies, in this chronic form of tuberculosis the mode of spread is by way of the blood or lymph streams. *This is distinct from the usual chronic forms* in which spread occurs by way of the bronchi, and from the well-known acute hematogenous disease, acute miliary tuberculosis, also from the generalized hematogenous spreads which often occur as a terminal event. Before chronic hematogenous tuberculosis was recognized, all such cases were confused with these latter forms, and unfavorable prognoses were given which were not borne out by the subsequent course of these cases.

Pathologically, chronic hematogenous dissemination tuberculosis is characterized by a fine, diffuse, uniform distribution of miliary lesions throughout a lung, or throughout symmetric parts of both lungs. This uniform distribution results from a spread through the vascular system of the lungs, which comes about when a caseous lymph node erodes into a blood or a lymph vessel. The contents of the node are then carried directly into the lungs, or to the heart, and thence to the lungs as well as the rest of the systemic circulation. Sometimes there are caseous nodes in the intimal coats of the blood vessels themselves, which break into the lumen and discharge their contents into the blood stream in this manner.

Where this material lodges, there is set up the usual tuberculous type of inflammation, but at first this inflammation is to be found only in the supporting tissues of the lungs and not in the air spaces, as is true in cases where spread occurs by way of the air passages. *This fact explains the paucity of symptoms in the early cases.*

The lesions are widespread and discrete and tend to fibrose. Occasionally, small, circular, punched-out cavities appear which often rapidly disappear without a trace. The name "fugitive cavities" has been applied to these lesions.

Clinically, the patients usually do not appear ill. There is little fever and little cough or expectoration. The sputum is often negative for tubercle bacilli. The chief complaint may be referable to extrapulmonary disease, such as tuberculosis of the bones, joints, kidneys, epididymis, etc. Cases have been observed at Eagleville in which the chief complaint was extrapulmonary disease, and in which the pulmonary disease was minimal. In others, the presenting trouble was disease of the lungs, without evidence of extrapulmonary foci. After arrest of the pulmonary disease, however, occasional patients have returned years later with Pott's disease, or with a tuberculous meningitis, or with tuberculosis of the urogenital system.

As regards treatment, these patients usually do well on the ordinary sanatorium regimen of food, rest, and fresh air. Widespread lesions of both lungs very often clear up without a trace. Even cavities have been found to disappear spontaneously, leaving no evidence behind.

Tuberculin therapy is very efficacious in the treatment of this type of disease.

The prognosis is very good. Many cases have been followed over a long period of years and to date they manifest no signs of reactivation of their disease. However, there is always the possibility of another similar spread, or repeated spreads, and there is the possibility of subsequent development of extrapulmonary disease in patients who have not received adequate treatment.

Wallace W. Dill, *Reporter.*

MONTOUR

May 8, 1941

Under the auspices of the Montour County Medical Society, a postgraduate seminar was held at the Geisinger Memorial Hospital, Danville. The program began at 8 o'clock with an operative clinic by Harold L. Foss and his associates.

Clyde H. Jacobs, Department of Opthalmology, Edith E. Nicholls, Department of Medicine, and Walter I. Buchert, Department of Urology, of the Geisinger Memorial Hospital, presented papers and demonstrations dealing with their specialties.

The guest speakers were Walter C. Alvarez, professor of medicine, University of Minnesota and Mayo Foundation, Rochester, Minn., Emil Novak, associate professor of obstetrics, Johns Hopkins University, Baltimore, Md., and Col. George F. Lull, chief personnel officer, Office of the Surgeon General, Medical Corps, U. S. Army, Washington, D. C.

Dr. Alvarez discussed "Puzzling Types of Abdominal Pain." He stated that in many instances the general practitioner should diagnose such obscure ailments because he is not misled by the opinion of specialists in other fields and is not so apt to be influenced by an excessive number of laboratory examinations. He stressed the importance of a careful detailed history as well as a thorough physical examination. Emphasis was placed on the importance of the psychologic approach to patients with obscure abdominal complaints as well as a careful inquiry into their habits.

Dr. Novak spoke of the development of our knowledge of the various endocrine secretions which regulate the physiologic changes which take place in the uterus. After discussing their normal relationship, he explained how an imbalance of these substances produces the abnormal conditions commonly encountered in obstetrics and gynecology and how they might be corrected by the administration of commercial endocrine products. His talk was characterized by simplicity and

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thoroughness of presentation and was very instructive and practical.

Colonel Lull explained many of the problems that now confront the Medical Corps of the Army. He reviewed in considerable detail the organization of the Medical Corps during World War I and compared the organization at that time with the one that is now in the process of construction. He emphasized that with the change in military tactics, as exemplified by the "blitzkreig," there has occurred a corresponding increase in the necessity for mobility of medical and hospital units.

After the meeting, Colonel Lull was deluged with questions from the younger members of the audience. He very graciously attempted to answer the inquiries as far as was possible.

Dr. Nicholls discussed the classification of the various forms of joint pain and briefly gave the differential diagnosis and treatment of the more common forms. Lantern slides were shown of arthritis of the hands and fingers. Rheumatoid arthritis was discussed in more detail. As for treatment, the avoidance of fatigue, cold, and worry was emphasized. Specific treatment consists of removal of foci of infection, the use of drugs, heat therapy, and the various types of injections. The importance of getting the patient in robust health was stressed.

Dr. Buchert spoke on "The Treatment of Prostatic Hypertrophy by Means of Transurethral Surgery," reviewing 226 consecutive transurethral resections on 200 patients. The average postoperative stay was 7.7 days with 41 per cent of the patients having a temperature reaction of 100 degrees or less. He reported good functional postoperative results in 83 per cent, with 6 deaths for the entire series. In his opinion, transurethral prostatectomy is a relatively safe form of treatment for prostatic hypertrophy and gives satisfactory results in the majority of the cases if sufficient tissue is removed. He reported 3 cases of recurrence —all in cases with malignancy.

Dr. Jacobs discussed the close relationship of the ophthalmologist to the general practitioner, and pointed out the ocular symptoms and findings in various conditions; namely, diabetes, arteriosclerosis, blood dyscrasia, and one obstetric problem. This was followed by a lantern slide demonstration showing both preoperative and postoperative kodachrome pictures of cancer of the eyelids which had been cured by removal and radium treatment. Two slides were devoted to a discussion of contact lenses.

The meeting was attended by 159 physicians from approximately 50 Pennsylvania towns and cities.

Max Cohen, *Reporter.*

SCHUYLKILL

May 12, 1941

The regular meeting was held at Locust Mountain Hospital, Shenandoah, with President Peter B. Mulligan presiding. After routine business, William T. Leach, surgeon-in-chief, presented the speakers, Reynold S. Griffith and William T. Lemmon, of Jefferson Medical College, Philadelphia. Following is an epitome of Dr. Griffith's splendid paper on **"Hypertension,"** an old and perplexing problem:

The rapid accumulation of new facts pertaining to the pathogenesis of hypertension has thrown a great deal of light on this old and perplexing problem. Goldblatt's observations have resulted in a mass of experimentation and results which confirm the rôle of renal ischemia in the production of a pressor substance which appears to be the direct cause of hypertension. Page has demonstrated the presence of an additional factor which appears to activate the pressor substance. He further finds evidence of an inhibitor substance which appears to counteract the pressor substance. This latter substance is supposed to be elaborated by normal kidney tissue. Thus as the supply of pressor substance increases, due to ischemia resulting from advancing kidney disease, the supply of inhibitor substance decreases, due to the loss of normal kidney tissue. *This work is largely experimental and is not necessarily the final solution to the problem.*

The clinical importance of renal ischemia as an etiologic factor is further emphasized by the report of Blackman, who found definite narrowing of the renal arteries, at or near their origin from the aorta, in 85 per cent of 50 cases of essential hypertension. This was in striking contrast to the 50 control cases in which only slight narrowing was observed in 10 per cent. A number of single case reports have appeared in which hypertension was relieved by removal of tumors or other masses which caused constriction of a renal artery. Likewise, the removal of a single diseased kidney because of pyelonephritis, tumor, or infarct has resulted in the rapid return of the blood pressure to normal.

Dr. Griffith emphasized the importance of urinary infections and obstructions as the cause of pyelonephritis and the associated hypertension, also the extreme variability in the clinical course of pyelonephritis, which makes it extremely difficult to recognize in many instances. Furthermore, the infection may remain inactive for many years after the acute stage and its presence may be recognized or suspected only during acute exacerbations.

It is obvious that hypertension in the great majority of instances is secondary to an underlying primary condition and is not a separate disease entity. At one time the term "essential" or "idiopathic" was applied to from 80 to 90 per cent of all cases of hypertension. *Owing to the recognition that the majority of cases are either neurogenic, endocrine, cardiovascular, or renal in origin, the diagnosis of essential hypertension is made less frequently and there is no doubt that it may be replaced entirely.* However, for the time being, we are still forced to use it in many instances.

Dr. Griffith emphasized the importance of recognizing the underlying conditions because these would largely determine the character of the treatment.

Dr. Lemmon's subject was "The Surgical Treatment of Peptic Ulcer and the Use of Continuous Spinal Anesthesia," illustrated by motion pictures (see Dr. Lemmon's paper read at the ninetieth annual session of the State Medical Society, printed on pages 975-980 of the May, 1941, JOURNAL).

There was considerable discussion of both papers, and after adjournment the members present were the guests of Dr. Leach and his staff at dinner.

June 10, 1941

The regular monthly meeting was held in the auditorium of the Public Library at Pottsville. President Peter B. Mulligan presided.

The usual business having been completed, the Com-

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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mittee on Medical Economics presented a resolution that the society go on record as to free choice of physician, and that this resolution be sent to various locally supported factories and industries, requesting that they adhere to this principle when referring injured employees for medical care. The resolution was adopted.

A sound motion picture, "Exploring with X-Rays," was presented. It was of educational and scientific value and was well received.

T. Lamar Williams, *Reporter.*

WASHINGTON

May 14, 1941

The May meeting was a full afternoon and evening session, held in the ballroom of the George Washington Hotel, Washington. Fifty-five members of the society and a number of guests from neighboring societies were present to enjoy the occasion. Dinner was served at 7 o'clock.

President George L. McKee called the meeting to order at 2:20 p.m., and asked Guy H. McKinstry, chairman of the program committee, to take charge of the meeting.

The first guest speaker was Donald M. Pillsbury, associate professor of dermatology, University of Pennsylvania, whose subject was **"Superficial Pyogenic and Fungous Infections of the Skin and Their Treatment,"** beautifully illustrated with colored photographic slides.

The second speaker was Kendall A. Elsom, associate in medicine, University of Pennsylvania, whose subject was **"The Treatment of Idiopathic Ulcerative Colitis."** He defined the condition as "a disease of uncertain etiology characterized by diarrhea which causes blood, mucus, and pus to appear in the stools, and is associated with pustular and later ulcerative changes in the colonic mucosa."

Dr. Elsom spoke of the perplexing problems in the management of this condition, requiring great resourcefulness and patience. It is a disease affecting, as a rule, those in the second to the fourth decades of life, producing serious and prolonged illness, with a mortality of 20 to 30 per cent.

Complications occur in a high percentage of cases, the commonest of which are polyposis of the colon, rectal stricture, anal and perianal infections, arthritis, and carcinoma. Rupture of the colon, amyloid disease, serious colonic hemorrhage, and terminal malnutrition are frequently the causes of a fatal outcome.

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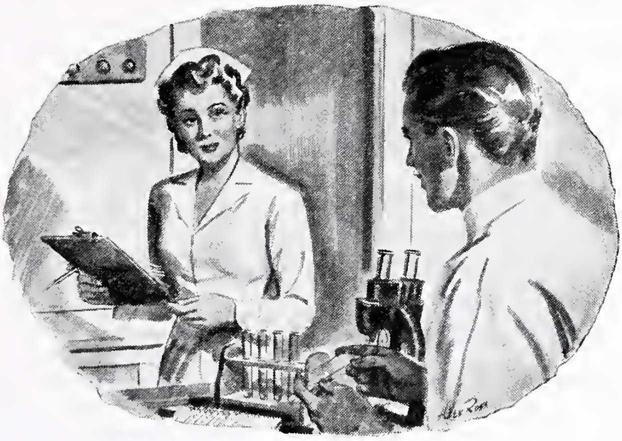

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Although various etiologic possibilities have been advanced by various writers, the speaker stated that the etiology is still unknown. Treatment, therefore, is nonspecific and aims (1) to control the diarrhea by drugs; (2) to minimize irritation of the colon by appropriate diet; (3) to maintain adequate nutrition (to a high caloric, high protein, low residue diet, vitamin supplements should be added liberally); (4) to maintain fluid balance (small repeated transfusions are of great value; intravenous glucose in saline or Ringer's solution may be employed also); (5) to give fever therapy (this has effected striking improvement in early and milder forms of the disease; (6) to control allergy *(food allergy is observed in 50 per cent of patients with ulcerative colitis; a carefully taken history is more valuable in these cases than skin testing);* (7) to give sulfonamides. The author has had disappointing results with these, in spite of favorable reports from others.

The rôle of surgery is much disputed. A recent survey by Ferguson and the author led them to the conclusion that in the more severe chronic cases surgery can offer the patient a far greater promise of improvement than can medical treatment alone. *Proper selection of cases is difficult and requires careful study. Preliminary ileostomy with elective colectomy subsequently has produced dramatic results.*

The third speaker was L. Kraeer Ferguson, assistant professor of surgery in the University of Pennsylvania, whose subject was **"Modern Methods of Office Surgery."** Useful suggestions for treatment of many of the commoner surgical emergencies were propounded, with the help of fine photographic and diagrammatic slides. *Considerable interest was aroused by his suggestion of early mobilization of certain fractures of the extremities with the help of injections of novocain solution into the site of fracture.*

Following the dinner, Louis H. Twyeffort, consulting psychiatrist to the Medical Division of the University Hospital, and psychiatrist to the Pennsylvania Hospital Institute, University of Pennsylvania, addressed the assembly on the subject, **"Emotional Factors in the Etiology and Therapy of Medical Conditions."** He said, in part, that owing to neglect in the past of this phase of therapy in the curriculum of most medical schools, there is a confused idea as to the true etiology of functional disorders, also a completely inadequate comprehension on the part of the patient. There is need to understand the "total person" in treating disease processes. In every illness there is both an anatomic and a mental component, each of which should be properly evaluated.

The majority of functional disorders are primarily psychologically conditioned. It is unfortunate to call them, for instance, "cardiac neuroses, or "gastro-intestinal neuroses," as these disorders are actually part manifestations of a larger disorder involving the entire personality. Incapacitating personality traits and attitudes, as well as that which happens to the individual, will cause emotional turmoil and its physiologic repercussion. These traits frequently result, not from inheritance, but from early conditioning by parental attitudes. The overdominant parent may foster overdependency in the child, for example. Such inadequacy will give rise to strong emotions frequently operative on a subconscious level, yet still very active in producing chronic tension states and their physical manifestations.

A comprehensive appreciation of functional illness must remain anatomically oriented. The hypothalmus serves as a bridge between psyche and soma, and acts as the chief effector of the emotions by way of the autonomic nervous system. Hence emotional perturbation reflects itself principally in those organs containing smooth muscle fibers and in disturbance of endocrine glandular tissue.

It is being increasingly suspected that functional disturbances may play a significant rôle in bringing about actual structural changes and tissue damage. Psychiatric contributions have supplemented our knowledge of the etiology of many cases of peptic ulcer, mucous colitis, etc.

Diagnosis of psychogenesis is established usually in indirect fashion. A thorough personality study should be part of any thorough medical approach to such a case.

No surgery should ever be undertaken "in the hope of relieving" some functional disorder without a complete preliminary psychiatric examination and evaluation.

Psychotherapy in the simpler functional disorders is not a prerogative solely of the neuropsychiatrist, but *should be handled in the general practitioner's office.* By promoting understanding of the meaning of his symptoms and the nature of his conflicts, the clinician may gradually show his patient how strong emotions cause physiologic dysfunctions, with the result that his symptoms may soon have an entirely new meaning for him.

During the treatment the energies of repressed emotional conflicts are converted from their somatic channels into psychic channels, permitting a constructive solution of the conflict through the medium of speech and volition. *The successfully treated patient speaks less in terms of his symptoms and more in terms of the situations and inner attitudes which cause their appearance.* Where it becomes necessary to refer refractive cases for specialized treatment, the physician can help the patient by acquainting him and his family with the reasons for the need of specialized help, as well as by emphasizing the time, effort, and co-operation necessary for successful results.

ROBERT W. DUNLAP, *Reporter.*

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Amylcaine Hydrochloride (Mono-n-amyl-amino-ethyl-p-amino-benzoate hydrochloride).—The actions of amylcaine hydrochloride resemble those of cocaine hydrochloride, but it does not cause mydriasis when the solution is dropped into the eye. Its use should be restricted to the production of corneal anesthesia in those cases in which mydriasis is not desired. The toxicity varies rather widely with the species and with the mode of administration. The anesthesia is induced promptly with little smarting; it does not increase intra-ocular tension. A 2 per cent solution is used in ophthalmology when mydriasis is not desired, 1 or 2 drops being usually sufficient. Novocol Chemical Manufacturing Co., Inc., Brooklyn, N. Y.

Solution Liver Extract-Lilly.—A sterile aqueous solution containing the nitrogenous nonprotein fraction G of Cohn et al. preserved with 0.5 per cent phenol. The potency of the preparation is such that its daily parenteral administration has been found to produce the standard reticulocyte response defined for each U.S.P. unit (injectable) present. Solution liver extract-Lilly is proposed for intramuscular injection in the treatment of pernicious anemia. In the average uncomplicated case of pernicious anemia in relapse a satisfactory response may be obtained with an initial dose of 5 to 20 U.S.P. units daily for the first 2 or 3 days, after which weekly injections of 7 to 15 U.S.P. units should be continued until the blood picture has returned to normal. For maintenance a minimum of 1 U.S.P. unit (injectable) daily is usually sufficient and may be given as a cumulative dose. The product is supplied in rubber-stoppered ampules, 3.5 c.c. (containing 2 U.S.P. units per c.c.), 10 c.c. (containing 2 U.S.P. units per c.c.), and 10 c.c. (containing 1 U.S.P. unit per c.c.). Eli Lilly & Co., Indianapolis *(J. A. M. A.,* May 31, 1941, p. 2505).

Accepted Devices for Physical Therapy

Products accepted by the Council on Physical Therapy of the American Medical Association for its list of accepted devices for physical therapy include:

Radio-Ear Type C, Special Electronic Hearing Aid.—Consists of a combined microphone and amplifier unit M-5375 with volume control switch and battery "economizer" batteries, and 2 crystal receivers, each with molded earpiece. The instrument is neat in appearance and substantially made. E. A. Myers and Sons, Inc., Mount Lebanon, Pittsburgh.

Airco Oxygen Therapy Line Regulator, No. 806 8681.—An oxygen therapy line or "station" pressure regulator for use where a manifold is employed to supply oxygen through a pipe line to several station outlets. The outlet fitting accommodates the standard oxygen therapy flowmeters used on the Council-accepted Airco Oxygen Therapy Regulator, Style 8481. This regulator is a single stage reducing unit, and it would be extremely dangerous to attach it to commercial oxygen tanks of 2100 pounds pressure or to any line with pressure in excess of 50 pounds per square inch. Air Reduction Sales Company, Jersey City, N. J.

Heidbrink Oropharyngeal Catheter Outfit.—A portable apparatus designed for the oropharyngeal administration of oxygen. It consists of an automatic pressure-reducing regulator with adapter for medical oxygen tanks, a flowmeter, a humidifying jar, a drip jar, and a nasal catheter. When the catheter is properly placed, the automatic pressure regulating valve is opened and the oxygen flows through the apparatus at any desired rate up to 11 liters per minute of oxygen or 14 liters of helium-oxygen mixture. Ohio Chemical and Manufacturing Company, Heidbrink Division, Minneapolis *(J. A. M. A.,* May 3, 1941, p. 2018).

Propaganda for Reform

Phenytoin Sodium (The Nonproprietary Name for Sodium Diphenyl Hydantoinate).—The Council on Pharmacy and Chemistry of the American Medical Association has adopted the designation "Phenytoin Sodium" (accented "phĕn-y-tōin sodium") as a nonproprietary name for sodium diphenyl hydantoinate. Acceptance is continued of Dilantin Sodium, the proprietary name under which Parke, Davis & Co. markets its brand of this product *(J. A. M. A.,* May 3, 1941, p. 2019).

Sulfadiazine and Sulfaguanidine.—The Council on Pharmacy and Chemistry has adopted the term sulfadiazine for 2-sulfanilamido-pyrimidine and the term sulfaguanidine for sulfanilylguanidine. The latter term was adopted after consultation with Dr. E. K. Marshall, Jr., who kindly expressed his assent to the council's recognition of the term *(J. A. M. A.,* May 3, 1941, p. 2019).

Swindlers' Swag—$200,000.—The Bureau of Investigation of the American Medical Association reports that a procedure used in an attempt to mulct leading citizens of the United States of considerable quantities of money is frequently called "The Spanish Prisoner Swindle." The letter requests aid in recovering a certain amount of money which the alleged prisoner says is "hidden in a secret compartment of a trunk that is now deposited in a customhouse in the United States." The Department of Justice and the Post Office Department urge the co-operation of all citizens in eradicating this fraud and request that anyone receiving a Spanish swindle letter bring it to the attention of the Department of Justice or the Post Office Department *(J. A. M. A.,* May 10, 1941, p. 2213).

Homozone (Ozone Generator) Not Acceptable.—The Council on Physical Therapy of the American Medical Association reports that "Homozone," manufactured by The Automatic Electric Devices Company, Cincinnati, is described in the advertising as "Nature's Own Health-Restoring and Air-Purifying Agent . . . Now . . . Man-Made and Controlled!" The firm's evidence presented in the form of testimonial letters is not regarded as critical and, in the opinion of the council, does not substantiate the claims made by the manufacturer that the Homozone is useful for "General Health Building," "Respiratory Ailments," and that it is ". . . a most valuable aid in the relief of many and diversified ailments." Recent investigations have confirmed earlier observations that for ozone to be even slightly effective as a bactericidal agent it must be present in such concentrations as are distinctly harmful to the delicate membranes of the nose, throat, and lungs of a human being. Regardless of where or how it is

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generated, ozone has little effect on bacteria except in strong concentrations which are harmful to the human being as well *(J. A. M. A.,* May 17, 1941, p. 2268).

Mixtures Containing Acetanilid.—Three articles on health hazards in acetanilid-containing nostrums and mixtures appeared in the September, October, and November issues of the *Journal of the American Dental Association.* The author, Dr. Paul J. Hanzlik, delves into the problem of chronic and acute intoxication, chronic effects, which include such symptoms as anorexia, impaired nutrition, loss of body weight, anemia, diminished resistance to intercurrent infections, lassitude, dizziness, headaches, and apathy; reviews the question of cyanosis and hemoglobin changes as sulfhemoglobinemia; passes on to an evaluation of addiction and abstinence symptoms and a comparison of the acute fatal and tolerated doses of acetanilid in animals and man; and ends with a discussion of the nature of acetanilid analgesia and the analgesia and symptomatic relief by rational procedures other than the use of analgesic drugs. The reports by Hanzlik offer an up-to-date and complete review on the dangers of acetanilid when subjected to promiscuous use *(J. A. M. A.,* May 17, 1941, p. 2280).

Koch Cancer "Cure" and the Canadian Cancer Commission.—The Bureau of Investigation of the American Medical Association is in receipt of a letter dated Apr. 2, addressed to a physician in Texas, from the Koch Laboratories, Detroit, in which it is stated "The Canadian Cancer Commission appointed by the Ontario Government has compiled a splendid series of scientific proofs of the efficacy of the Koch treatment in curing advanced cancer." The letter goes on to state that this series is being offered in book form for one dollar. According to the Toronto *Daily Star* for Mar. 19, the third report of the Ontario Cancer Commission adds nothing to its November report in which the commission reported, with reference to glyoxylide, sponsored by Dr. David Arnott of London, Ont., that it "is still hopeful that progress may be made. . . . And thinks it desirable to defer any review of the evidence before it to date or the expression of any opinion until it either has the benefit of some laboratory study or it is finally successful in having an investigation made" *(J. A. M. A.,* May 31, 1941, p. 2525).

FAT IS LIFE-AND-DEATH ISSUE IN DIABETES

New knowledge of diabetes, showing that in this disease of faulty utilization of sugar, the paramount, life-and-death issue is fat, won for Dr. William C. Stadie, of the University of Pennsylvania, the John Phillips Memorial Medal for 1940-1941 of the American College of Physicians.

The diabetic, without insulin, is unable to use sugars and so he must fall back on fats for his energy requirements, Dr. Stadie pointed out. He gets part of the energy he needs by burning fat in the muscles themselves. But from one-third to one-half of the energy from fat is obtained by a preliminary burning of fats in the liver, during which substances called ketone bodies are formed.

Regulation of this part of the fat mobilization for energy, however, is limited, so that more ketone bodies may be formed from fat than can be used. If this continues unchecked, the dangerous acidosis and coma of diabetes follow.—*Science News Letter,* May 10, 1941.

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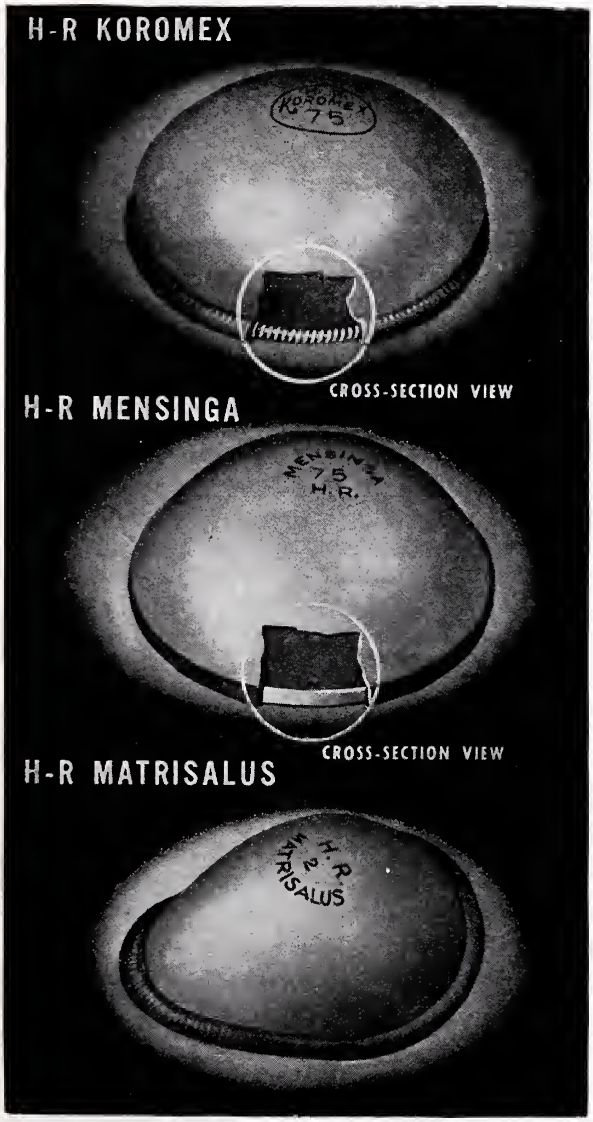

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THE WOMAN'S AUXILIARY

MRS. GEORGE C. YEAGER, *Editor*
1419 E. Susquehanna Avenue
Philadelphia, Pa.

PRESIDENT'S LETTER

Dear Auxiliary Friends:

As your representative, I attended the A. M. A. convention in Cleveland, in June. It was inspiring to meet the women from so many of the states of our Union. They are such splendid, educated, and cultured women that again I feel it was a privilege to greet them in my official capacity.

It was interesting to hear the reports from each state, and I felt keenly aware that our own auxiliaries had excelled in the prescribed work as outlined by our parent auxiliary. One of the past presidents personally told me that Pennsylvania has one of the keenest and best auxiliaries in our national organization. That was a real compliment and I pass it on to you with great pride.

We were well represented by delegates and guests as well as by personnel on the Executive Board. Again we are proud that Mrs. David W. Thomas is the national treasurer and that Mrs. Francis P. Dwyer accepted the chairmanship of the national Public Relations Committee. You will learn all about the convention when you hear the report in October at Pittsburgh, so I'll leave the rest to Mrs. Francis F. Borzell, who will give the report at that time.

The auxiliary has lost an interested friend in the passing of Dr. Frank C. Hammond. Always constructive in his criticisms and helpful in his suggestions, Dr. Hammond was a valued friend, especially to the president. He never failed to send each month the clippings regarding auxiliary activities from each county medical society bulletin in our state. I have missed them greatly because they kept me informed regularly about the activities of each organization. He was a kind friend, always concerned with presenting accurately to the public and to the profession the facts concerning the healing art. Quoting from *Religio Medici,* "Every man is not only himself; men are lived over again; the world is now as it was in ages past; there was none then, but there hath been some one since that parallels him, and is, as it were, his revived self." The sympathy of the entire auxiliary is extended to Mrs. Hammond.

May I, in closing, wish for you all a happy vacation period and a restful change from routine.

Cordially,

Mary E. (Mrs. Maxwell) Lick,
President.

THE SIXTEENTH ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sept. 30 to Oct. 3, 1940

The sixteenth annual meeting of the auxiliary to The Medical Society of the State of Pennsylvania convened in the French Room of the Hotel Ritz-Carlton, Philadelphia, at 9 o'clock on the morning of Oct. 1, 1940.

The president, Mrs. John H. Doane, Mansfield, presided. The meeting opened with the singing of "America," directed by Miss Edna Haddock, soloist, who sang the first verse. The Reverend Arthur C. James delivered the invocation. Reverend James is minister of the Broad Street Methodist Church and participated as pastor of the convention chairman, Mrs. M. Fraser Percival.

Mrs. Walter S. Brenholtz, of Williamsport, chairman of necrology, conducted an "In Memoriam" service for the 19 members of the auxiliary who have "crossed the bar" during the past auxiliary year, and Miss Edna Haddock, soloist, sang the "Twenty-third Psalm."

Dr. Edward L. Bortz, president of the Philadelphia County Medical Society, greeted the delegates and guests, and Mrs. Charles J. Swalm, president of the Philadelphia County Auxiliary, greeted the convention assembled on behalf of the hostess auxiliary. Mrs. Ira M. Henderson, president of the Franklin County Auxiliary, speaking for the convention, responded to the welcomes of both Dr. Bortz and Mrs. Swalm.

Mrs. Edward W. Beach, of the Philadelphia County Auxiliary, chairman of registration and credentials, reported the following registration as of 5 o'clock, Sept. 30, 1940: auxiliary members 112, executive board members 34, delegates 65, alternates 24, and guests 18, making a total of 253.

Mrs. Walter F. Donaldson, national program chairman, gave a report of the National Auxiliary Meeting held in New York in June. She described the different activities they enjoyed at Sherry's, the Waldorf, and the Hotel Pennsylvania as well as what the well-dressed "Lady Auxiliary" was wearing. She outlined the business activities, pointing out that one new state had joined the national organization during the year, namely, Ohio, and that Pennsylvania is still leading in membership.

Mrs. John H. Doane, president of the State Auxiliary, read her report of activities during the 1939-1940 year, and Mrs. Leon C. Darrah asked for a rising vote in appreciation of this fine report.

On motion of Mrs. Frank C. Parker, seconded by Mrs. George C. Yeager, the minutes of the preceding convention were not read since they had been published in the State Journal during the year. Mrs. Francis P. Dwyer, recording secretary, called the roll. Twenty-nine counties answered either by delegate or alternate, and 16 counties did not respond.

It was moved and seconded by Mrs. Yeager and Mrs. George B. Jobson that the remaining reports be accepted in a group. The motion was passed.

Mrs. Wilfred W. Wilcox, corresponding secretary, reported that she had taken care of all the correspondence as directed by the president. Mrs. Dwyer reported the sending of 160 pieces of mail and 4 telegrams during the year; the compiling of a résumé of state work based on the county reports, 100 per cent of which reported; and the recording of the pre-convention and post-convention board meetings as well as the convention sessions.

Mrs. John R. Davies, treasurer, reported an expenditure of $3020.35 with a balance of $1623.23, and Mrs. Dwyer presented the auditor's report on the treasurer. All 3 of the above officers' reports and the auditor's report were voted upon and accepted.

Mrs. J. K. Williams Wood, chairman of the nominating committee, gave the following report, announcing that the committee had held all its meetings by telephone and had completed its work by Sept. 15:

President-elect, Mrs. Charles C. Crouse, Greensburg; first vice-president, Mrs. M. Fraser Percival, Philadelphia; second vice-president, Mrs. Leon C. Darrah, Reading; third vice-president, Mrs. Charles G. Eicher, Mt. Lebanon; recording secretary, Mrs. Francis P. Dwyer, Renovo; corresponding secretary, Mrs. Frederick W. Underhill, Erie (appointed by president); treasurer, Mrs. John R. Davies, Blossburg; directors: one year: Mrs. Walter F. Donaldson, Pittsburgh, Mrs. James G. Gemmell, McIntyre, Mrs. Newton H. Stein, Silver Creek; two years: Mrs. John H. Doane, Mansfield, Mrs. Frank C. Parker, Norristown, Mrs. Robert S. Woehrle, Wilkes-Barre.

The convention chairman gave a brief résumé of the program of events, and the president announced that Mrs. William F. Krick, of Reading, had been appointed to handle subscriptions for the *National Bulletin.*

It was moved and seconded by Mrs. Parker and Mrs. Laurrie D. Sargent that the meeting be adjourned at 10:40 a.m.

The second session of the sixteenth annual meeting of the Auxiliary to The Medical Society of the State of Pennsylvania opened at 3:30 p.m. on Oct. 1, 1940.

The minutes of the morning session were read by the secretary, Mrs. Dwyer, and were approved as read.

The election of delegates to the 1941 National Convention to be held in Cleveland took place. According to the by-laws, 28 delegates are allowed from Pennsylvania on membership, 18 to be elected at this convention session and 10 to be elected at the post-convention board meeting. The following delegates were duly elected:

Name	*County*
Mrs. Ralph L. Reber	Berks
Mrs. Edward Lyon	Lycoming
Mrs. Charles J. Swalm	Philadelphia
Mrs. Paul G. McKelvey	Westmoreland
Mrs. Elmer H. Bausch	Lehigh
Mrs. Jay G. Linn	Allegheny
Mrs. Edgar S. Buyers	Montgomery
Mrs. John L. Mansuy	Lycoming
Mrs. William F. Krick	Berks
Mrs. Francis F. Borzell	Philadelphia
Mrs. Carl J. Newhart	Lehigh
Mrs. Ralph L. Cox	Fayette
Mrs. Charles I. Shaffer	Somerset
Mrs. J. Newton Hunsberger	Montgomery
Mrs. Drury Hinton	Delaware
Mrs. James H. Corwin	Washington
Mrs. J. Treichler Butz	Lehigh
Mrs. James H. Delaney	Erie

The president suggested that there be the same number of alternates as delegates, and so the following alternates were duly elected:

Name	*County*
Mrs. Cecil F. Freed	Berks
Mrs. Joseph M. Ellenberger	Montgomery
Mrs. James D. Stark	Erie
Mrs. James L. Whitehill	Beaver
Mrs. John H. Krick	Westmoreland
Mrs. Ernest G. Maier	Philadelphia
Mrs. Clinton T. Saylor	Somerset
Mrs. Laurrie D. Sargent	Washington
Mrs. Frederick W. Underhill	Erie
Mrs. Ross K. Childerhose	Dauphin
Mrs. John F. Smaltz	Delaware
Mrs. Walter S. Brenholtz	Lycoming
Mrs. Gordon J. Saxon	Philadelphia
Mrs. J. Edwin S. Minner	Lehigh
Mrs. Hewett C. Myers	Dauphin
Mrs. John Howorth	Luzerne
Mrs. Othello S. Kough	Fayette
Mrs. David M. Dunbar	Washington

Before the committee heads gave their reports in résumé, it was moved and seconded by Mrs. Sargent and Mrs. Yeager that the reports be accepted in their entirety. The motion was passed.

Mrs. Maxwell Lick, president-elect and chairman of the councilors, reported 189 new members, making a total of 3103 with 2775 members whose dues are paid to date.

The president read the report submitted by Mrs. Joseph C. Doane, chairman of the by-laws committee. The full report is made a part of these minutes.

Mrs. David M. Dunbar, chairman of the clipping service, reported that all clippings submitted to her are sorted and classified and have been sent to Dr. Frederick M. Jacob, who files them in the office of the State Society secretary for reference.

Mrs. Laurence C. Milstead, chairman of exhibits, announced that 24 counties had sent posters picturing their activities, and she hopes that in another year all 47 counties will co-operate in this respect.

Mrs. Dwyer, reporting for Mrs. David B. Ludwig, chairman of archives, said that Mrs. Ludwig is still at work on the history of the first 15 years of the auxiliary.

Mrs. Charles C. Crouse, *Hygeia* chairman, reported that the number of subscriptions received from May 1, 1939, to Apr. 30, 1940, was 1319, marking an increase of 139 over the previous year. The Lehigh County Auxiliary won second place and a prize of $20 in the national contest, and Fayette and Westmoreland counties won honorable mention.

Mrs. Cecil F. Freed, legislative chairman, announced that a bulletin was being prepared explaining the 3 objectives of the committee; namely, to inform oneself, to consult with the medical societies, and to enlighten the public. These objectives are identical with those of the National Auxiliary.

Mrs. Walter S. Brenholtz, chairman of necrology, reported a close contact with the county auxiliary presidents, and Mrs. Edward Lyon, program chairman, reported her efforts to tie in the county programs with the national programs.

Mrs. George C. Yeager, chairman of publicity, reported that 35 out of the 47 auxiliaries had submitted meeting reports, and she gave various suggestions and words of advice regarding the form in which the reports should be submitted.

Mrs. James D. Stark, chairman of public relations, reported having sent suggestions to the county chairmen, but said that their success lay in their execution of these suggestions. At present she is getting out a folder, which will be ready soon.

Mrs. E. Arthur Whitney, resolutions chairman, had no duties for the year since there were no resolutions.

Mrs. Wellington D. Griesemer moved that the reports be accepted as read. Mrs. Borzell seconded the motion, and it was passed.

Since there was no further business, the meeting was adjourned at 4:20 p.m.

The third session of the sixteenth annual meeting of the auxiliary to The Medical Society of the State of Pennsylvania opened at 9:15 a.m. on Oct. 2, 1940.

Mrs. Beach announced that the registration was as follows: auxiliary members 177, executive board members, 36, delegates 87, alternates 38, and guests 24, making a total of 362.

The minutes of the second session were read by the secretary, Mrs. Dwyer, and were approved as read.

The resolution adopted by the board at its last meeting on Sept. 30, 1940, that a roster be compiled annually under the supervision of the recording secretary was presented. Mrs. John F. McCullough and Mrs. Swalm moved and seconded that the resolution be adopted, and the motion was accepted by vote.

A new method of handling the roll call of the districts was initiated in which each councilor was allotted 5 minutes for her report with a warning at the end of the first 3 minutes. A report from each of the 12 districts was heard, and all of the presidents of the county auxiliaries who were present were introduced to the assembly. The reports were interesting, dealing for the most part with the social, financial, and educational activities of the auxiliaries. Mrs. Swalm moved that the reports be accepted in their entirety, Mrs. Parker seconded the motion, and the motion was passed.

Mrs. E. Arthur Whitney, chairman of the resolutions committee, presented a resolution to the effect that the convention extend thanks to the convention chairman, Mrs. Percival, to Mrs. Swalm, to all committee chairmen and committees for their consideration and endeavor in behalf of the convention; to Dr. Bortz and all other speakers supporting the program; and to the press, the Ritz-Carlton, Philadelphia, the officers, and Mrs. Doane for their co-operation and thoughtfulness which contributed to the success of the convention. Mrs. Wilkins and Mrs. Gemmell moved and seconded that the resolution be accepted, and the motion was passed.

Mrs. John F. McCullough, finance chairman, presented a report of actual expenditures for 1939-40 in comparison with the budget for that year, and she presented a recommended budget for 1940-41, providing for an estimated expenditure of $3560 and an estimated income of $4788.73. Mrs. McCullough and Mrs. Lyon moved and seconded that this recommended budget be accepted; the motion was passed.

Mrs. M. Fraser Percival, convention chairman, after making a few brief announcements regarding further convention activities, presented, on behalf of the Philadelphia County Auxiliary, a lovely gift to the retiring president, who accepted it most graciously.

Mrs. J. K. Williams Wood, chairman of the nominating committee, announced that she had posted the names of the nominees. The list was reread by the secretary, and Mrs. Sargent moved that the secretary be instructed to cast a unanimous ballot. The motion was seconded by Mrs. Yeager and passed.

Mrs. Doane then proceeded to present the new officers for the 1940-41 term. She installed the new president, Mrs. Lick, saluting her with an affectionate kiss and presenting to her the gavel of authority and her wishes for success and co-operation in her new office, in lieu of the "swearing in" as promised.

Mrs. Lick delivered an acceptance address in which she expressed her intention of bringing Mrs. Doane's slogan "EDSA" to a fuller completion. She pleaded for continued and increased friendship between individual members as a means of obtaining new members and cementing the auxiliary together, and she urged the members to sustain a united effort to retain their individualism against the proposed legislation for regimentation of the profession. Mrs. Lick presented her corresponding secretary, Mrs. Frederick W. Underhill, of Erie.

After an announcement that the final registration of the convention totaled 388, the meeting adjourned at 11:30 a.m.

Mary H. Dwyer, *Secretary,*
Gertrude A. Doane, *President.*

COUNTY AUXILIARY REPORTS

Berks.—Climaxing the year's activities the auxiliary held its annual reciprocity luncheon on June 9 at the Berkshire Country Club, Reading; 82 members and guests attended.

Mrs. Ralph L. Reber, retiring president, reported on the year's work. Among the accomplishments she cited were the gift of $200 to the Medical Benevolence Fund and $50 to the Berks County Medical Society, the procuring of 25 speakers for public health programs, the contribution of 247 garments to the Needlework Guild, and the securing of medical supplies for Great Britain. She also mentioned the sewing done for the Red Cross the receiving of honorable mention in the national *Hygeia* contest, the sponsoring of a public health program, the conducting of an essay contest, and the issuing of a copy of the auxiliary's by-laws and constitution in booklet form.

In reviewing the various social affairs held by the auxiliary, Mrs. Reber stated that "no organization can function successfully without a spirit of friendliness and co-operation among its members." A poster summarizing Mrs. Reber's report was exhibited and will be on display at the state convention.

Two new mtmbers, Mrs. Israel K. Light and Mrs. Sylvio J. Barra, were received. Nine members have been added during the year, making a total membership of 126 regular members and 16 honorary members.

A summary of the financial status of the organization was given by the treasurer, Mrs. Frank G. Runyeon. According to the report of the auditing committee, the books were found to be in excellent condition.

Mrs. Edward G. Meter, newly elected president, was introduced by the retiring president, Mrs. Reber. Mrs. Meter expressed her thanks to the auxiliary for the honor shown her and asked the co-operation of the members during the coming year.

During the luncheon a trio including Therese Ramstein, violinist, Robert Redcay, cellist, and Ralph Tragle, pianist, provided music. Miss Ramstein, who has received much acclaim for her unusual ability, played her $35,000 Stradivarius violin. Later in the afternoon Miss Jean Shellabear, 11-year-old daughter of Dr. and Mrs. Hugh P. Shellabear, delighted the audience by playing 3 xylophone selections.

Among the distinguished guests present were Mrs. J. Treichler Butz, of Allentown, district councilor; Mrs. Francis F. Borzell, president of the Philadelphia County Auxiliary; Mrs. Charles J. Swalm, retiring president of the Philadelphia County Auxiliary; Mrs. George C. Yeager, state publicity chairman; Mrs. Elmer H. Bausch, president of the Lehigh County Auxiliary; Mrs. Edgar S. Buyers, Norristown; Mrs. W. Burrill Odenatt, state parliamentarian; and Mrs. M. Fraser Percival, first vice-president of the State Auxiliary.

The luncheon arrangements were in charge of Mrs. Wellington A. Lebkicker, Mrs. Solon L. Rhode, and Mrs. Hugh P. Shellabear. Mrs. Philip R. Wiest arranged the transportation.

Blair.—The Auxiliary held its April meeting at the Penn Alto Hotel in Altoona. At this meeting we were honored to have present, Mrs. Maxwell Lick, our state president, Mrs. Walter Orthner, our district councilor, and Dr. Ralston O. Gettemy, president of the Blair County Medical Society. All 3 speakers proved most interesting and entertaining. A luncheon and business meeting were enjoyed also.

The June meeting was held at the beautiful Blairmont Country Club at Hollidaysburg. Twenty-five members were present. A short business meeting followed the luncheon, at which time it was voted to send $75 to the Medical Benevolence Fund. Bridge was then played and 3 prizes were presented to the lucky winners. Our next get-to-gether will be held at the summer home of Dr. Arthur S. Brumbaugh. This outing has become an annual affair and we are all looking forward to a delightful day.

The annual meeting of the Sixth Councilor District was held at Juniata College in Huntingdon on June 25. The program of the Woman's Auxiliary began at 10:30 a. m., with Mrs. Walter Orthner, district councilor, presiding. The reports of the 6 county auxiliaries were read by their respective presidents. Mrs. Charles C. Crouse, president-elect of the State Auxiliary, gave a most interesting talk, after which she was presented with a beautiful corsage of red roses.

At the close of the morning we joined the men at luncheon, following which we were entertained in the Music Hall with a piano recital by Miss Dorothea Beisser of Harrisburg. Miss Beisser, who is supervisor of music at the summer session of Juniata College, gave us some beautiful selections from Bach and Brahms, as well as some more modern classical music.

A tour of the campus concluded the well-planned day. One of the outstanding buildings was the Auditorium, a modern recreational hall used for both campus and civic enjoyment.

Bucks.—The annual dinner of the auxiliary was held on Wednesday evening, May 28, at Trainer's Restaurant in Quakertown, the proceeds being sent to the Medical Benevolence Fund. After dinner the remainder of the evening was spent in playing cards.

The regular meeting of the auxiliary was held on June 11 at Washington's Crossing Inn. After dinner a business meeting was held. The members were requested to bring samples of medicine to the next regular meeting for the British War Relief.

Chester.—The auxiliary met on June 18 at Westtown Farm House, where a delightful luncheon was enjoyed at 1 o'clock. There was a large attendance of members and several guests. A short business meeting followed the luncheon. The treasurer announced that the necessary quota for the Medical Benevolence Fund had been obtained and would be turned over to the proper persons.

Mrs. Robert Tomlinson, wife of the business manager of Westtown School, escorted the auxiliary members on a tour of the school. There they saw beautiful grounds comprising 625 acres, with over 500 specimens of trees and magnificent flower gardens. They also had the pleasure of meeting Mr. James Walker, the principal, who gave much interesting information regarding the school. The meeting was voted one of the most delightful the auxiliary has held this year.

Erie.—The auxiliary met on June 9 at the home of Dr. and Mrs. James H. Delaney for their final meeting of the year. There were 63 members and friends present. A delightful picnic luncheon was served in the beautiful garden overlooking Lake Erie.

Mrs. John F. Hartman presided and committee chairmen gave their yearly reports. Mrs. Maxwell Lick, state president, spoke. Mrs. Ralph D. Bacon gave her usual interesting report, her subject being "The Doctor's Wife." At the conclusion of the business meeting and program, Mrs. Hartman turned the gavel over to Mrs. Frank J. Theuerkauf, the incoming president.

The following are the other officers for the coming year: President-elect, Mrs. James H. Delaney; first vice-president, Mrs. Ralph D. Bacon; second vice-president, Mrs. Henry R. Steadman; recording secretary, Mrs. J. Harrison Tate; corresponding secretary, Mrs. Alexander M. Usher; treasurer, Mrs. George E. Becker; auditor, Mrs. Charles A. McNeill.

Lackawanna.—Election of officers and the annual meeting preceded the bridge-luncheon held at the Scranton Country Club on June 25. Mrs. Daniel E. Berney, reporting for Mrs. Ernest L. Kiesel, nominating chairman, presented the following slate of new officers, who were duly elected and installed: President, Mrs. John J. Sullivan; first vice-president, Mrs. Ulrich P. Horger; second vice-president, Miss Gretchen Houser; recording secretary, Mrs. Michael J. Stec; corresponding secretary, Mrs. T. Russell Evans; treasurer, Miss

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A moment of silence was observed as a tribute to the memory of the late Mrs. Edward W. Whalen. During the business session the auxiliary voted its contribution to the Medical Benevolence Fund. All members were asked to register at City Hall on June 27 in the local Civilian Defense Council. Mrs. Horger reported that all medical and surgical equipment donated for British aid would be taken care of at the county medical society office in the Medical Arts Building. Miss Clarissa Gibson, supervisor of the Visiting Nurse Association and a member of the auxiliary, spoke on behalf of Camp Archbald, a camp for underprivileged local girls, and it was decided to give a substantial contribution to this project. A gift was presented to Mrs. Louis A. Milkman, outgoing president, by Mrs. Walter J. Larkin as a token of the auxiliary's appreciation of the inspiring leadership which has characterized her term of office.

Following the meeting, cards were played. Approximately 90 members and friends attended, including representatives of the Lackawanna County Dental and Pharmaceutical Auxiliaries. Miss Gretchen Houser was in charge of the luncheon.

Lehigh.—Mrs. Carl J. Newhart, of Hokendauqua, was elected president of the auxiliary at the regular meeting on June 10 at the Woman's Club, Allentown. Chosen to serve with Mrs. Newhart were Mrs. Morgan D. Person, president-elect; Mrs. Victor J. Gangewere, treasurer; Mrs. Ralph F. Harwick, corresponding secretary; Mrs. Asher G. Kriebel, recording secretary; and Mrs. Thomas A. Ruddell, financial secretary. They will be inducted into office at the meeting scheduled for Sept. 9.

Mrs. Elmer H. Bausch, retiring president, conducted the business session. Mrs. Harry E. Klingaman was in charge of the program and presented Patricia Gallagher, small daughter of Dr. and Mrs. Cornelius A. Gallagher, who entertained with tap dancing, songs, and recitations.

Mrs. Bausch and Mrs. Newhart presided at the tea table, decorated with pink roses and clusters of cherries, during a social hour after the meeting. Mrs. John H. Hennemuth, hospitality chairman, arranged the tea.

Lycoming.—The regular meeting of the auxiliary was held at the Woman's Club, Williamsport, on Apr. 25. Luncheon was served at one o'clock with the business meeting following immediately after. Mrs. Herman Finkelstein, president, presided.

Mrs. Carl H. Senn reported that 494 surgical instruments had been collected and delivered to "Bundles for Britain."

It was voted unanimously to present a gift of $50 each to the Muncy Valley Hospital and the Jersey Shore Community Hospital. Also, a $10 club membership in the Crippled Children's Society was approved.

Mrs. Maxwell Lick, of Erie, state president, was the guest of honor at the luncheon and also gave an interesting address following the business session, first of all complimenting our auxiliary members for the manner in which they discussed, pro and con, all recommendations and suggestions presented. She stated that it reminded her so much of her own auxiliary and certainly made her feel very much "at home." We appreciate Mrs. Lick's visit to our county and feel that it has helped us immeasurably.

The Seventh Councilor District meeting was held in the Lycoming Hotel, Williamsport, May 9, with Mrs. J. Louis Mansuy, district councilor, in the chair.

Since the inception of the annual councilor district meeting, we cannot recall having had such an impressive array of auxiliary leadership gathered together at one time. Besides our state president-elect and state chairman of councilors, Mrs. Charles C. Crouse, of Greensburg, we had present on this occasion Mrs. Walter F. Donaldson, Pittsburgh, program chairman for the National Auxiliary; Mrs. David W. Thomas, Lock Haven, National Auxiliary treasurer; Mrs. John H. Doane, Mansfield, parliamentarian of the National Auxiliary; Mrs. John R. Davies, Blossburg, state treasurer; and Mrs. Francis F. Borzell, state chairman of necrology and also president-elect of the Philadelphia County Auxiliary.

Reports of the activities and accomplishments of the various county auxiliaries of the district were given by Mrs. Farnham H. Shaw, Wellsboro, for Tioga County; Mrs. William J. Shoemaker, Lock Haven, for Clinton County; Mrs. Ross H. Jones, Coudersport, for Potter County; and Mrs. Herman Finkelstein, Williamsport, for Lycoming County.

The members and guests were welcomed by Mrs. James H. Burrows, of Williamsport, and Mrs. Henry G. Hager, of Lock Haven, responded for the visitors.

A feature of the meeting was the inspirational and informative address by the president-elect, Mrs. Crouse, as well as the splendid messages left us by the other national and state officers.

An enjoyable part of our morning program was the address by Dr. Francis F. Borzell, president of The Medical Society of the State of Pennsylvania.

The joint meeting and luncheon with the medical society members was greatly appreciated and enjoyed by the members of the auxiliary.

The record attendance was both gratifying and encouraging, and the genuine interest shown by our leaders engendered a spirit of high morale in our district and local auxiliaries and assures progress in the years that lie ahead.

Schuylkill.—The last meeting of the season was held on June 10, at which time the nominating committee presented the new slate for the coming year. The new officers to assume their duties in September are: President, Mrs. John J. Moore, Pottsville; first vice-president, Mrs. John W. Conrad, Port Carbon; second vice-president, Mrs. Roland F. Fleck, Mahanoy City; treasurer, Mrs. Martin O. Blechschmidt, Cressona; corresponding secretary, Mrs. Belford C. Blaine, Pottsville; and recording secretary, Mrs. William D. Prescott, Pine Grove.

The nominating committee comprised Mrs. T. Lamar Williams, Mt. Carmel; Mrs. Newton H. Stein, New Philadelphia; Mrs. George O. O. Santee, Cressona; Mrs. Peter B. Mulligan, Ashland: and Mrs. J. Edward McDowell, Pottsville.

A minute of silence was observed in memory of Mrs. Amanda S. Matten, of McKeansburg, who died a few weeks ago. Mrs. Matten was one of the charter members of the auxiliary and beloved by those who shared in the work of the auxiliary with her.

The closing meeting was held in connection with a pleasant tea enjoyed in the nurses' home of the Pottsville Hospital. Mrs. Charles V. Hogan, Pottsville, retiring president, presided at the tea table, and Mrs. Rose Cavanaugh Sweeney, Miss Winnetta Fetzer, directors, and Miss Carrie Davis, dietitian, were the hostesses assisted by a group of nurses.

York.—On May 13 the auxiliary held a reciprocity tea in the Medical Club rooms of the Professional Building, York. Twenty-four guests were present from Lebanon, Harrisburg, and York. Mrs. David C. Hoff, the newly appointed district councilor, was present and made an address. A very delightful social time was enjoyed.

On June 10 the annual meeting was held in the form of a picnic. Yearly reports were heard from all officers and committee chairmen. The following officers were elected: President, Mrs. Elwood P. Flanders; first vice-president, Mrs. Clyde L. Seitz; second vice-president, Mrs. Paul D. Shaub; secretary, Mrs. Arthur L. Evans; corresponding secretary, Mrs. Chalmers D. Ensminger; treasurer, Mrs. W. Frank Gemmill; directors for 1 year, Mrs. Charles C. Neff, Mrs. Henry D. Smyser, and Mrs. William H. Treible; directors for 2 years, Mrs. Robert E. Lau, Mrs. Homer C. Hetrick, and Mrs. G. Emanuel Spotz.

OUTBREAKS OF FOOD POISONING DUE TO CADMIUM CONTAMINATION

Four outbreaks of food poisoning due to contamination with cadmium (a metal used in important alloys) are reported in *The Journal of the American Medical Association* for July 12 by Samuel Frant, M.D., and Irving Kleeman, New York, who advise that "No utensils to be used in the preparation or dispensing of food or drink should be permitted to be plated with cadmium. In every basic state and municipal public health law relating to the manufacture and preparation of food there should be a provision for this control. In addition, in order to provide full protection throughout the country, there should be federal regulations prohibiting this practice in interstate commerce."

The conditions under which the 4 outbreaks occurred were as follows:

1. On June 15, 1937, at 1:15 p.m., 3 members of a family drank cold "lemonade" made from a flavored, yellow crystalline powder. Fifteen minutes later all 3 became ill with nausea, abdominal pains, and vomiting. Three other members of the family who had eaten the same food but did not drink the "lemonade" remained well. The patients recovered within 24 hours.

The drink had been made by dissolving the crystals with tap water in a glass bowl and this mixture was poured for cooling into an ice cube tray of an electric refrigerator. On examination the tray and divider were found to be cadmium-plated.

2. On June 29, 1938, 7 persons, members of 3 neighboring families, became ill within half an hour of drinking home-made punch. They had consumed no other food or drink in common. The symptoms were nausea, abdominal cramps, and weakness.

The drink had been prepared from a fruit-flavored punch syrup, lemons, oranges, and tap water. To cool the mixture, ice cubes taken from a metal refrigerator tray were used. In the routine investigation, cadmium was found in the prepared punch, in the ice cubes, and in the plating of the refrigerator tray.

3. On Jan. 7, 1940, 5 persons in one family became ill after a dinner. Within 15 minutes several members were attacked with nausea, abdominal cramps, vomiting, and diarrhea, and within one hour all were similarly affected.

Suspicion was immediately directed to a raspberry gelatin dessert eaten by the family. This had been permitted to cool and then transferred to a metal ice tray. The congealed mixture remained in the tray for 3 hours before being served. A sample of the gelatin dessert contained cadmium. The metal freezing tray was found to be cadmium-plated.

4. On July 11, 1940, 2 members of a family and their 4 guests became ill with vomiting and cramps within 10 minutes after drinking iced tea. The guests had not previously had any food or drink in common with the family. In this instance the metal pitcher in which the tea was steeped and cooled was found to be cadmium-plated.

In addition to these 4 outbreaks, the authors find that "the records of the department of health contain details of the illness of at least 29 school children in 3 boroughs of the city who were reported as having violent nausea during the first week of May, 1929. After 5 or 6 hours all the children recovered completely. In the investigation of these illnesses a history was obtained from the children that popsicles (flavored ices frozen on a stick) had been eaten just previously to the children's becoming ill. Samples of the popsicles . . . were found to contain cadmium. Further investigation indicated a common source for the popsicles, and complete studies were therefore made of the manufacturing plant. Examination of the popsicle molds themselves revealed them to be plated with cadmium. Further investigation disclosed that the molds in ques-

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tion had been lent . . . to another popsicle plant and that before their return the surface of the molds had been . . . replated, cadmium being used as the replating metal.

"The molds and all the finished food products in the plant were seized, and no further operations were permitted with any cadmium-plated molds. . . .

"Chronic poisoning due to continued ingestion of minute amounts of cadmium compounds has never been reported, nor is there any great likelihood that such a condition is at all prevalent, since the immediate, violent, emetic action results in the elimination of most of the poison. In industry, however, with constant exposure by inhalation, cases of chronic poisoning have been recorded in which the symptoms were digestive disturbances, loss of appetite, vomiting, and cachexia.

"Cadmium is a ductile metal of bluish-white appearance with an atomic weight of 112.41 and a melting point of 320.9 C. It is capable of taking a high polish; on this is based its rapid rise in industry as a plating metal for rustproofing. It was first used as a coating for strings on pianos and other musical instruments, but now it has been adopted as a coating for many motor vehicle parts because of its relatively high melting point and resistance to wear. . . .

"Cadmium presents its greatest hazard to the health of man during its production and in the handling of its compounds. Most dangerous are the inhalation of fumes and vapors arising from retorts or condensers while cadmium and cadmium oxide are being manufactured and the inhalation of dust in bagging and handling the materials."

The authors also advise that "Health officers and manufacturers of utensils for food should be made cognizant of the syndrome of poisoning with cadmium and the necessity for restricting the use of this material. It is especially important today that the plating industry, searching for substitutes for tin and other valuable war materials, be cautioned that cadmium is not a suitable substitute in the plating of utensils for food. New York City has already taken these steps. The plating industry was called into conference and advised to discontinue the use of cadmium in utensils and dispensers for food. Subsequently, the sanitary code, which deals with all measures concerning the health of the citizens of the city, was amended to prohibit the use of cadmium in articles used in the preparation of food and drink. . . .

"A typical outbreak may be detected with ease if the characteristics of the syndrome are kept clearly in mind. The association of immediate food poisoning of groups with the ingestion of an acid liquid prepared in a metal container should cause suspicion, and an immediate investigation for the presence of cadmium-plated utensils should be made."

Selfishness is not living as one wishes to live; it is asking others to live as one wishes to live. And unselfishness is letting other people's lives alone, not interfering with them. Selfishness always aims at creating around it an absolute uniformity of type. Unselfishness recognizes infinite variety of type as a delightful thing, accepts it, acquiesces in it, enjoys it.—Oscar Wilde.

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MEDICAL NEWS

Births

To Dr. and Mrs. Irving J. Wolman, of Philadelphia, a daughter, Carol Stone, June 22.

To Dr. and Mrs. William E. Flickinger, of York Springs, a son, Frederic William, June 15.

Marriages

Miss Jean Alice Ludebuehl to William K. Fisher, M.D., of Meadville, May 28.

Miss Dorothy Jean Long, of Hummelstown, to Richard T. Smith, M.D., of Harrisburg, June 8.

Miss Margaret Lansing Fox, of Annapolis, Md., to Merrill Bemis Hayes, M.D., of Upland, in July. Dr. Hayes is now stationed at Fort Belvoir, Va.

Miss Charlotte Kearney, daughter of Dr. and Mrs. J. Gardner Kearney, of Reynoldsville, to Capt. Frederic H. Steele, Medical Corps, U. S. Army, June 28. Dr. Steele was formerly located at Huntingdon.

Deaths

○ *Indicates membership in county medical society, The Medical Society of the State of Pennsylvania, and the American Medical Association.*

○ **Clarence H. Willig,** Mars; Temple University School of Medicine, 1933; aged 40; died on Apr. 24.

○ **William Moore Woodward,** McKeesport; University of Pennsylvania School of Medicine, 1891; aged 76, died on May 16.

○ **John P. Laughlin,** Pittsburgh; University of Pennsylvania School of Medicine, 1897; aged 70; died on May 23.

○ **Milton Kenneth Rosen,** Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1939; aged 27; died on June 12.

○ **George Ross Winters,** Pittsburgh; New York University College of Medicine, 1899; aged 69; died on May 1. Dr. Winters was a Fellow of the American College of Surgeons.

○ **Simon Seitz Mann,** Columbia; Hahnemann Medical College and Hospital of Philadelphia, 1894; aged 74; died suddenly on July 14. Dr. Mann was a former burgess of Columbia. He is survived by 3 brothers.

○ **Henry Samuel Kieser,** Reading; Hahnemann Medical College and Hospital of Philadelphia, 1930; aged 38; died on July 11 while vacationing at Stone Harbor, N. J. He was a Fellow of the American Medical Association.

○ **M. Edward Headland,** Butler; Starling Medical College, Columbus, Ohio, 1889; aged 79; died on May 20 at his home following a month's illness. Dr. Headland was serving his third term as coroner of Butler County at the time of his death.

○ **John William Dixon,** Pittsburgh; University of Pennsylvania School of Medicine, 1897; aged 69; died on June 12. He was a Fellow of the American Medical Association and the American College of Surgeons and served with distinction for many years on the surgical staff of the Columbia Hospital and later of the Pittsburgh Hospital in Pittsburgh.

○ **Thomas Aloysius O'Brien,** Philadelphia; University of Pennsylvania School of Medicine, 1905; aged 59; died on June 21 following a 6 months' illness. Dr. O'Brien was a surgeon and consultant at the Wills Eye, Philadelphia General, St. Joseph's, St. Agnes', and Fitzgerald-Mercy Hospitals. He was a Fellow of the American Medical Association and the American Academy of Ophthalmology and Oto-Laryngology. He is survived by his wife, a daughter, and 4 sons, one of whom is James Lawrence Miles O'Brien, M.D., of Philadelphia.

James Ely Talley, Lima (Delaware County); University of Pennsylvania School of Medicine, 1892; aged 77; died on July 3. Dr. Talley retired from active practice 2 years ago. He resigned as a member of the Philadelphia County Medical Society this year. Dr. Talley was professor of cardiology at the Graduate School of Medicine of the University of Pennsylvania from 1921 to 1938. With others Dr. Talley was instrumental in founding the United States Navy Base Hospital No. 5, at Brest, France. He was director of the Medical Division in Brest from 1917 to 1918, having the rank of Lieutenant Commander. In 1919 he was promoted to Commander, Medical Corps, United States Navy. Dr. Talley was a member of the American Heart Association and a Fellow of the American College of Physicians. He is survived by his wife.

Miscellaneous

J. Frank Donehoo, M.D., of Washington, was awarded the degree of Doctor of Science in June during the one hundred and fortieth commencement of Washington and Jefferson College.

Herbert T. Kelly, M.D., of Philadelphia, participated in a symposium on "The Management of Various Types of Obesity" presented at the spring clinic of the Ingham County Medical Society at Lansing, Mich., May 1.

The third annual postgraduate seminar of the Germantown Hospital and Dispensary, Philadelphia, will be held at the hospital, Dec. 3, 4, and 5, 1941. All physicians are cordially invited to attend. There is no registration fee.

Morris Fishbein, M.D., editor of the *Journal of the American Medical Association,* was guest speaker at the dinner held on June 17 in the Hotel William Penn, Pittsburgh, in connection with the annual meeting of the Institute of Food Technologists held in Mellon Institute.

At a meeting of the Philadelphia Branch of the American Urological Association, the following officers were elected for the year 1941-1942: President, Theodore R. Fetter, M.D.; vice-president, Edward W. Campbell, M.D.; and secretary-treasurer, Charles A. W. Uhle, M.D., all of Philadelphia.

The Medical Alumni Association of the University of Pittsburgh is holding a dinner at the Hotel William Penn, in the Cardinal Room, Wednesday, Oct. 8, at 6:30 p. m. The meeting will be held in conjunction with the annual session of The Medical Society of the State of Pennsylvania. Tickets will be available at the registration desk.

Mario A. Castallo, M.D., has been appointed chief obstetrician of St. Mary's Hospital, Philadelphia. Dr.

Castallo succeeds the late Dr. Pedro J. Carreras, who was killed in an automobile accident. In addition to his new duties, Dr. Castallo is associate in obstetrics in charge of the Department of Operative Obstetrics to the Junior Class at Jefferson Medical College.

The thirty-sixth annual meeting and birthday dinner of the Mount Carmel Medical Society was held in Marble Hall Hotel, Mount Carmel, on May 13, President James A. Hughes presiding. Dr. E. Roger Samuel introduced the speaker of the evening, Dr. T. Grier Miller, of the School of Medicine of the University of Pennsylvania, whose subject was "The Diagnosis and Treatment of the More Common Causes of Indigestion."

A new 3-story addition to the Geisinger Memorial Hospital at Danville was recently dedicated. The new building provides additional facilities, especially in the diagnostic department. The addition connects with the main dispensary building. The third floor provides additional operating rooms, additional surgical offices, fracture rooms, office and treatment room for the urologic department, with bathrooms and showers for the surgeons. The second floor is given over entirely to the department of medicine with offices for the chief of the section, for his secretary, several completely equipped examining rooms, waiting rooms, history-taking rooms, and a clinical laboratory. The basement floor is given over entirely as a large central supply room, sterilizing room, and solution preparation room. The equipment throughout the building is most complete and up to date.

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Approximately 200 Rotarians from 7 central Pennsylvania towns and cities attended the annual Geisinger Hospital Crippled Children's Association meeting in the Geisinger Hospital, Danville, Monday evening, May 19, and saw evidence of the value which regional crippled children have received from treatment within the past year. At the same time, the assembled group heard Dr. Allen Stockdale, nationally known New York City minister, author, and lecturer, deliver an inspiring address on the topic, "The America We Defend."

Referring to the project of helping crippled children, Dr. Stockdale said that Rotary and Rotarians everywhere should strive to do something constructive and beneficial for those who are under handicaps.

After the address, Roy L. Simon, M.D., orthopedic surgeon at Geisinger Memorial Hospital, who has charge of the crippled children's clinic, displayed a few lantern slides of cases treated at the weekly clinics.

The Lebanon County Medical Society recently adopted the so-called Erie County Plan of having additional teams of physicians for making mass examinations of selectees under the National Selective Service Act. The Good Samaritan Hospital in Lebanon has permitted the use of its clinic building, laboratory facilities, and volunteer nurses, graduates and undergraduates, to assist the 30 or more volunteer physicians.

G. D. Searle & Co., Chicago, announce that work has been started on the building of their new laboratories and plant, which are located on the outskirts of Chicago.

In addition to air-conditioning, the laboratories will have facilities for humidity control and deodorizing. There will be laboratory units for organic chemistry, biochemistry, bacteriology, pharmacology, and that newest technic of science, micro-analysis. Each of these laboratories will require specially designed piping and service systems.

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The Phi Rho Sigma Medical Fraternity, which was founded 50 years ago at Northwestern University, recently held a 4-day convention at the Spink-Wawasee Hotel, Lake Wawasee, Ind. Delegates were present from all of the student chapters representing the leading medical schools in the United States and Canada.

Dr. Jonathan Forman, of Columbus, Ohio, editor of the *Ohio State Medical Journal*, was re-elected president; Dr. Norman M. Macneill, of Jefferson Medical College, Philadelphia, vice-president; Dr. Ralph W. Elliott, of Cleveland, Ohio, was re-elected secretary-treasurer after 20 years of faithful service in this office. Other members elected to the Grand Council of Phi Rho Sigma were: Dr. Francis L. Jaubert, of New Orleans, secretary of the Association for Crippled Children of Louisiana; Dr. Dudley M. Stewart, orthopedic surgeon of Toledo, Ohio; Dr. Robert M. Graham, Pullman Car Company, Chicago, Ill.; Dr. Calhoun McDougall, of Emory University, Atlanta, Ga.; and Dr. William Bromme, urologist of Detroit, Mich. Dr. Paul L. McLain, of the University of Pittsburgh School of Medicine, was elected editor of the publications of Phi Rho Sigma Fraternity.

The one hundred sixteenth annual commencement of The Jefferson Medical College of Philadelphia was held on June 6. The commencement address was delivered by Dr. John M. T. Finney, emeritus professor of surgery, Johns Hopkins Medical School, on "The True Province of the Doctor."

The graduating class numbered 120, bringing the total number of graduates to 16,814. The graduates represented 18 different states, the Territory of Hawaii and Puerto Rico, Korea, and Iran. Forty-three members of the graduating class were commissioned as first lieutenants in the Medical Reserve Corps of the United States Army. The commissions were presented by Dr. Asa M. Lehman, Lt. Col., M.C., U. S. Army.

The following promotions in the teaching corps have been made during the past session: Dr. Lewis C. Scheffey, professor of gynecology; Dr. John B. Montgomery, clinical professor of gynecology; Dr. Burgess L. Gordon, clinical professor of medicine. Dr. Austin T. Smith, associate professor of laryngology; Dr. Andrew Ramsay, associate professor of histology and embryology; Dr. Leandro M. Tocantins, associate professor of medicine; Dr. Franklin R. Miller, associate professor of medicine; Dr. William T. Lemmon, assistant professor of surgery; and Dr. C. Calvin Fox, assistant professor in laryngology.

The College of Physicians of Philadelphia awarded the Alvarenga Prize on July 14 to John J. Bittner, M.D., of the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, in recognition of his distinguished studies on cancer.

This prize was established by the will of Pedro Francisco DaCosta Alvarenga of Lisbon, Portugal, an associate fellow of the College of Physicians, to be awarded annually by the College of Physicians on each anniversary of the death of the testator, July 14, 1883, to the author of the best memorial upon any branch of medicine which may be deemed worthy of the prize.

Under the rules laid down by the American Academy of Pediatrics, their new educational-to-the-public film, "When Bobby Goes to School," may be exhibited to the public by any licensed physician in the United States. All that is required is that he obtain the endorsement by any officer of his county medical society. Endorsement blanks for this purpose may be obtained on application to the distributor, Mead Johnson & Company, Evansville, Ind. Such endorsement, however, is not required for showings by licensed physicians to medical groups for the purpose of familiarizing them with the message of the film.

"When Bobby Goes to School" is a 16 mm. sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Ind.

HAIR AND NUTRITION

The distribution and quality of the hair is a subject of importance to both men and women, neither of whom actually requires it for warmth. Hair growth and hair color are so clearly characteristic of age, sex, and frequently of physical stamina as to be significant in every stranger whom one may chance to meet. Increasing baldness and graying of persons under 30 has been noted.

Studies upon vitamin B components and hair growth have revealed a pure vitamin which apparently affects the hair with specificity. Pantothenic acid, recently identified as a part of the vitamin B complex, a powerful growth-stimulating substance found in many plants and animals, its name meaning "from everywhere," is believed to be a vital element in hair production. According to G. A. Emerson and H. M. Evans, it is important in preventing graying of rats, but is not the only factor involved. They obtained an anti-gray hair factor for rats from liver filtrate, and also from molasses.

D. V. Frost and F. Pierce Dann likewise note that in rats pantothenic acid is important in prevention of graying, but is not solely responsible for it.

According to D. W. Woolley, of the Rockefeller Institute, inositol, a sugar-like substance obtained from plants and animals, with pantothenic acid, is important in preservation of hair in mice. Baldness develops in the absence of either pantothenic acid or inositol from the ration of this species. Mouse alopecia in pantothenic acid deficiency, Woolley says, develops first upon the ventral surface of the body and on the chest. Thence it spreads up the sides and across the back. The mice become completely naked except for the head. In inositol deficiency, the first bare spots were usually seen on the thigh, well up toward the spine, whence baldness spread rapidly up the back and over the sides.

It is of interest that this substance, inositol, which has not usually been regarded as a food, is of importance in hair growth in these animals. According to Emerson and Evans, inositol does not influence graying of hair in rats.

Investigations thus show that components of vitamin B are significant in maintenance of healthy fur in several species, and that pantothenic acid is of particular importance. Vitamin requirements of different animals have long been known to vary considerably, and a dietary hair restorer for the human race is still not a part of the medical menu.—*Southern Medical Journal.*

* * *

Lack of relaxing sleep a leading indiscretion of youth. See page 1404.

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☐ Proc. Soc. Exp. Biol. and Md., 1934, 32, 241-245—" Pharmacology of Inflammation: III. Influence of Hygroscopic Agents on Irritation From Cigarette Smoke."

☐ N. Y. State Jour. Med. 1935, 35-No. 11,590—"Irritating Properties of Cigarette Smoke as Influenced by Hygroscopic Agents."

☐ Laryngoscope, 1935, XLV, No. 2, 149-154—"Some Clinical Observations on the Influence of Certain Hygroscopic Agents in Cigarettes."

☐ Laryngoscope, 1937, XLVII, 58-60—"Further Clinical Observations on the Influence of Hygroscopic Agents in Cigarettes."

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BOOK REVIEWS

ARTHRITIS AND ALLIED DISORDERS. By H. M. Margolis, M.D., M.S., F.A.C.P., chief of Arthritis Service, St. Margaret Memorial Hospital; associate in medicine, Montefiore Hospital; consultant in medicine, Pittsburgh Diagnostic Clinic. First edition. New York: Paul B. Hoeber, Inc., 1941. Price, $7.50.

To the medical student and the general practitioner the author addresses this volume which the reviewer could wish had been available during his medical school days because of the author's gift for organization and lucid exposition of his material. Important investigative and experimental work is summarized. Bibliographies indicating source material are incorporated in each chapter. In the reviewer's opinion, these 500 pages with 140 clinical photographs might well serve as an introduction to the ever enlarging and frequently controversial literature of the subject.

The general practitioner will welcome this addition to his armamentarium, for the author has emphasized the simpler diagnostic and therapeutic procedures applicable to the commoner and frequently more discouraging disease entities; namely, chronic atrophic and hypertrophic arthritis, according to the nomenclature of the American Rheumatism Association. Prevention of deformities is stressed and indications for surgical intervention are outlined. Treatment methods, including chrysotherapy in atrophic arthritis, sulfanilamide in gonococcal arthritis, etc., are detailed with observations of others and conclusions of author based upon his experience.

Less attention is given to other arthritides—rheumatic fever, gout, gonococcal and tuberculous arthritis. Of help from the standpoint of differential diagnosis are chapters devoted to consideration of "Pain in the Shoulder and Arm" and "Low Back and Sciatic Pain," including discussions of bursitis, cervical rib, radiculitis, neuritis, posture, tumors, and protrusion of intervertebral disk.

The author holds that the lack of specific cure in the nonspecific arthritides has been too long lamented. He points out that although likewise no specific cure is known for tuberculosis, nevertheless, morbidity and mortality due to the latter disease have been greatly reduced within recent years, and it is his conviction that application of present knowledge of arthritis may be expected to yield as gratifying results.

MANUAL OF CLINICAL CHEMISTRY. By Miriam Reiner, M.Sc., assistant chemist to the Mount Sinai Hospital, New York. Introduction by Harry Sobotka, Ph.D., chemist to the Mount Sinai Hospital, New York. With 18 illustrations. 1941. New York: Interscience Publishers, Inc. Price, $3.00.

Although originally intended by the author as a "few directions" for emergency performance of laboratory determinations by "interns . . . in the middle of the night," the scope and style of this pocket-size volume are such that many others in the profession will find it a useful guide no matter what the time of day.

In addition to the classic methods of Folin and Wu, Van Slyke, et al. for chemical examination of blood, spinal fluid, urine, feces, and gastric content, more recently developed quantitative tests for estimation of sulfanilamide, barbiturates, estrogenic hormone, vitamins A, B_1, and C, and various functional tests in common use are detailed.

Line drawings are used to indicate the apparatus setup. Specific reference to the original description in the literature heads the outline of each test, making additional information readily available. No attempt is made to be exhaustive. The method given in each case is that in use at the Mount Sinai Hospital at current writing. Of necessity, most procedures require volumetric and colorimetric apparatus, standard solutions and reagents, and in some instances experimental animals, which are unlikely to be found outside laboratories specifically equipped for the purpose.

BEYOND THE CLINICAL FRONTIERS. A Psychiatrist Views Crowd Behavior. By Edward A. Strecker, A.M., Sc.D., Litt.D., M.D., professor of psychiatry in the Undergraduate and Graduate Schools of Medicine, University of Pennsylvania, and consultant and chief-of-service, Institute of the Pennsylvania Hospital. New York: W. W. Norton & Company, Inc., 1940. Price, $2.00.

Dr. Strecker, the distinguished professor of psychiatry at the University of Pennsylvania, has summarized in this book some of the modern advances in psychiatry, particularly in relation to mental hygiene and planning for the future. The book is made up of his series of Salmon Lectures, given at the New York Academy of Medicine. It is well written and adequately covers the field of modern psychiatry in relation to the world in general. An excellent bibliography is included. For those interested in modern psychiatry, this book is highly recommended.

ART IN EYEGLASSES. What to Wear and Why. By Frank Graham Murphy, M.D., Mason City, Iowa. 1940. Price, $1.00.

This 17-page booklet is a treatise on the art of selecting eyeglasses that conform to the rhythmic lines of the face. The various designs of lenses are illustrated, and suggestions are made as to the eyeglasses to be worn by persons with different types of temples, eyebrows, and noses.

THE NEWER NUTRITION IN PEDIATRIC PRACTICE. By I. Newton Kugelmass, B.S., M.A., M.D., Ph.D., Sc.D., attending pediatrician, Broad Street Hospital and Heckscher Institute, New York. 1155 pages with 183 illustrations. Philadelphia, Montreal, London: J. B. Lippincott Company, 1940. Price, $10.00.

In nearly 1200 pages the author, whose high scientific standing is accepted throughout the world, has covered every possible phase of nutrition in its relation to the child from birth through adolescence. The text is divided into 3 main sections. The first deals with the physiology of nutrition in all of its aspects. The second section discusses nutrition in health from the newborn period through infancy, the preschool age, and childhood. Section 3 is devoted to a complete discussion of nutritional aspects of the deficiency, metabolic, allergic, infectious, and regional diseases.

This book is really an encyclopedia of physiology and nutrition, both normal and pathologic, and can be used as an excellent guide for the pediatrician or general practitioner who is concerned with the normal growth and development of children.

A TEXTBOOK OF PHYSIOLOGY. By William D. Zoethout, Ph.D., professor of physiology in the Chicago College of Dental Surgery (Loyola University), and W. W. Tuttle, Ph.D., professor of physiology, College of Medicine, State University of Iowa. Seventh edition, with 302 illustrations. St. Louis: The C. V. Mosby Company, 1940. Price, $4.50.

The authors have written this volume to fill the gap between larger, more voluminous works and those offering a briefer course for students in dental, pharmacy, and normal schools with but 50 to 150 hours to devote to the subject of physiology.

This seventh edition has been brought up to date due to the continuous progress in the field of physiology. Far more space has been devoted to the practical side of nutrition, physical exercise, mental work, fatigue, and kindred topics than usually is found in texts in physiology. For those desiring a clear, logical, and concise account of facts of physiology, this book is recommended.

UNCONQUERED ENEMY. The Story of the Battle on a Hundred Scientific Fronts Against Cancer. By Boris Sokoloff, M.D., Sc.D. New York: The Greystone Press, 1940. Price, $1.75.

This very readable book is a discussion of the development of the war on cancer, the questions of heredity, contagiousness, curability, relationship to virus diseases, and the influence of irritation and diet. This book can do much good in saving lives since it is written for the laity. The cases of Presidents Grover Cleveland and Ulysses S. Grant and of Dr. H. H. Janeway are described dramatically and instructively.

This ninth offering to the laity by Dr. Sokoloff conforms to the usual arrangement and content of such works. Moreover, it contains brief sketches of medical research in popular form that are not frequently included in books of this type.

FIRST AIDS IN READING DIFFICULTIES. By S. Weir Newmayer, A.B., M.D., formerly chief of Division of Child Hygiene; assistant chief medical inspector, Bureau of Health; ophthalmologist and supervisor of school medical inspection, City of Philadelphia; lecturer on postgraduate courses in pedagogy. 176 pages. Philadelphia: North American Printing Company, 1940. Price, $2.00.

Dr. Newmayer discusses the causes of visual defects, the various tests for visual acuity, the influence of planes of vision, eye muscles and tests for efficiency, eye training and exercises, correcting glasses, eye hygiene, and many other phases of the care of the eyes. This is not a medical book, but an educational one. The author has studied the subject from its foundation and has applied his intensive investigation not only to the physical but also to the mental, psychologic, and pedagogic phases. The book offers suggestions to educators for children who fail to learn to read and also offers suggestions for readjustments and remedial measures.

AN ANATOMIC ANALYSIS OF SPORTS. By Gertrude Hawley, M.A., formerly in charge of physical education for women at Northwestern and Stanford Universities. New York: A. S. Barnes and Company, 1940. Price, $3.00.

This book is of more interest to athletic directors than to physicians, although to those whose professional work takes them into contact with high school and college athletics, it may answer some of the questions not readily found in current textbooks.

Muscular action and joint function are carefully described, and although one cannot entirely agree with everything the author writes, on the whole it is a careful analytic study. The muscles which are especially used in various sports are named and their actions described. Although the author considers anatomy, physiology, chemistry, and physics vital to the study of man in motion, the book is almost exclusively an anatomic analysis of sport technics, as the title indicates.

DEPENDABLE MODERN TREATMENTS FOR BURNS. By Harold Joe Davis, safety engineer, Tulsa, Okla. Pocket size, 1940. Beebe, Ark.: Underhill Press. Price, 50 cents.

This 8-page pamphlet covers several different kinds of burns and about 10 different treatments to be used for burns. Two pages are devoted to the glossary. This booklet may be too involved for the average layman and not scientific nor definite enough for the physician.

INTRODUCTION TO MEDICINE. By Don C. Sutton, M.S., M.D., associate professor of medicine, Northwestern University School of Medicine; attending physician, Medical Division of the Cook County Hospital; chief of the Cardiac Clinic, Cook County Hospital, Chicago; attending physician, Evanston Hospital. With introduction by Ada Belle McCleery, R.N., superintendent of Evanston Hospital, Evanston, Ill. With 144 text illustrations and 14 color plates. St. Louis: The C. V. Mosby Company, 1940.

The student nurse of today is required to have some knowledge of medicine in order to perform her many duties capably. Therefore, Dr. Sutton has written this book especially for the nurse—from her standpoint.

Part I is written to give the student nurse a survey of the fundamental medical background. Chapters on social service, mental reaction of the patient to disease, parasites, pathology, physical examination, laboratory tests, and abnormal environment are a few of the subjects included in this section.

Part II is a description of disease entities, including those required by the standards of the Committee on Curriculum of the National League on Nursing Education. The symptoms, diagnosis, and treatment are covered with a minimum of detail, the discussion usually stressing the nurses' relation to the problem under consideration.

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This book is well recommended for nursing schools and for the graduate nurse who realizes that her work involves a knowledge of other matters in addition to the bedside care of patients.

PSYCHIATRY FOR NURSES. By Louis J. Karnosh, B.S., Sc.D., M.D., associate clinical professor of nervous diseases, School of Medicine, Western Reserve University; director of neuropsychiatry, City Hospital, Cleveland; consulting neuropsychiatrist, Cleveland Clinic; and Edith B. Gage, R.N., supervisor, Neuropsychiatric Division, City Hospital, Cleveland. Illustrated. St. Louis: The C. V. Mosby Company, 1940.

This book is one of the best among the recent crop of books on psychiatry for nurses and can be recommended to both student and graduate. It tends to present in a simple and concise, though adequate manner, the salient points of psychiatry so that the pupil nurse may get an adequate appraisal of the facts in the nursing of mentally sick patients. The book will enable the nurse to familiarize herself quickly with the symptoms and treatment of the more common psychoses.

This volume includes chapters on personality, mental mechanisms, etiology, management of mental cases, specific requirements for medication, physiotherapy, shock therapy, and occupational therapy. A useful chapter on such legal aspects as commitment, guardianship, testamentary capacity, and legal rights has been added. The bibliography and the questions at the end of each chapter should prove to be very valuable to the student and the instructor. The illustrations and case histories incorporated to enlighten the theory are excellent. This book is recommended for the student nurse and for use in the classroom.

THE MARCH OF MEDICINE. Edited by the Committee on Lectures to the Laity of the New York Academy of Medicine. 168 pages. New York: Columbia University Press, Morningside Heights. 1940. Price, $2.00.

The New York Academy of Medicine has for years sponsored a highly successful series of lectures on interesting phases of medical history as seen with the perspective of modern medicine. This book contains 6 lectures, the subjects of which range from health in Elizabethan England to the romance of modern surgery. The book is very interesting and should appeal to physicians as enjoyable "bedside reading." While this work will prove of value to medical men, it is sufficiently simple and clear to prove of special value to those who have a marginal interest in medicine such as biology teachers, health educators, instructors in physical education, nurses, scientists, and technicians. The book is recommended to all who would like to know how medicine has kept pace with and contributed to modern civilization.

HANDBOOK OF HEARING AIDS. By A. F. Niemoeller, A.B., M.A., B.S. With a foreword by Harold Hays, M.D., F.A.C.S. New York: The Harvest House, 1940. Price, $3.00.

This book is intended and well adapted for those hard-of-hearing individuals who are seeking advice prior to buying a hearing aid for air and bone conduction, either electrical or mechanical. Since there are dozens of mechanical and electrical devices on the market, all with their fantastic promises, those with impaired hearing are somewhat confused as to which instrument will most adequately fill their needs.

Needless to say, there are some "quack" devices which have been perpetrated upon the unsuspecting public. Therefore, this book is a timely one because it disseminates accurate and comprehensive information regarding this subject.

The author very clearly discusses all the known types of hearing aids, pointing out the merits and demerits of each. An appendage is given at the end of the book containing complete information on the more widely used hearing aids, manufacturer, and cost. It is simply and interestingly written and apparently is without prejudice. It should provide your answer to the impaired patient who seeks your advice.

GRADUATE MEDICAL EDUCATION. 1940 Report of the Commission on Graduate Medical Education, 60 E. Scott Street, Chicago, Ill.

The Commission on Graduate Medical Education, which is composed of 20 educators from leading medical schools, has formulated educational problems and principles involved in continuation of medical training for a period of years after graduation and the adequate training of specialists. The contents of this volume consist of chapters on internship, residency, postgraduate medical education, and specialty boards.

Everyone interested in medical education, higher standards of training, teaching, and ethics will profit by reading this book. Since no physician should be satisfied with his present medical knowledge, he should read this volume which gives information on general features of postgraduate education, with specific suggestions as to how it should be developed and maintained.

MEDICAL NURSING. By Edgar Hull, M.D., F.A.C.P., clinical professor of medicine, Louisiana State University School of Medicine; visiting physician, Charity Hospital of Louisiana at New Orleans; Christine Wright, R.N., B.S., graduate of Davis-Fischer Sanatorium, Atlanta, Ga.; instructor of nursing arts, Charity Hospital School of Nursing, New Orleans, La., 1928-1939, etc.; Ann B. Eyl, B.S., assistant dietitian, Cook County School of Nursing, Chicago, Ill., etc. 168 illustrations, including 11 color plates. Philadelphia: F. A. Davis Company, 1940.

This book will be of interest to all student and graduate nurses. Brief, yet accurate, descriptions are given of all diseases which fall in the realm of internal medicine. Treatment, nursing care, and dietary management of these diseases are also given.

Basic principles of medical nursing, diseases of the respiratory system, the cardiovascular system, the blood and blood-forming organs, the digestive system, urinary system, osseous and muscular systems, and nervous system, and diseases due to emotion are a few of the subjects covered in this volume.

Because this book was written by a physician, a

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Every precaution has been taken to insure accuracy in these advertisements and in this index, but there is no guarantee against errors or omissions.

nurse, and a dietitian, 3 points of view are presented. It is recommended to all student and graduate nurses.

IMMUNE-BLOOD THERAPY OF TUBERCULOSIS. With Special References to Latent and Masked Tuberculosis. By Joseph Hollos, M.D. 195 pages. Boston: Bruce Humphries, Inc. Price, $2.50.

According to the author, this book is a summary of his observations in the field of specific therapy of tuberculosis covering a period of 30 years. He proposes a new conception of tuberculosis in that this disease appears not only in its well-known manifest forms but its presence may be masked by a great variety of symptom complexes, or by apparently such independent diseases as neurasthenia, epilepsy, "thyroidism," and many others.

The introductory chapter is devoted to a history of the author's medical experience in Europe during which he developed his "immune-blood" therapy. His attempts to introduce this treatment into the United States, he says, have been frustrated by the organized medical profession. He is highly critical of the American Medical Association and of the National Tuberculosis Association.

Even the most casual reading of this book gives one a shock because of the utter lack of scientific evidence presented to substantiate the wide variety of assertions made by the author. For example, case records and histories of the patients treated show a complete disregard for roentgenograms, and it would seem that the author rarely, if ever, used this method of studying his patients. The text is rambling and case histories are of the manner of lay testimonials with little or no medical data.

In the latter half of the book the author presents numerous "cases" to show that such conditions as dysmenorrhea, leukorrhea, cholelithiasis, renal calculus, acute appendicitis, coryza, epilepsy, dementia praecox, acute rheumatic fever, and others may be due in whole or in part to tuberculous toxemia. It is to be noted that the great majority of the references appended to the back of the book date between 1906 and 1912. It is unfortunate that the author, no matter how valuable may be his ideas, should have presented his subject in such an unscientific manner.

HOW TO OVERCOME BREATHING BY MOUTH WHILE ASLEEP

About the only practical measure to help overcome breathing through the mouth during one's sleep is a sling or bandage that will hold the jaw closed during the night, *Hygeia, The Health Magazine* advises in a recent issue in answer to an inquiry.

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LETTERS

Pennsylvania Chest Physicians' Meeting

Gentlemen:

The Pennsylvania Chapter of the American College of Chest Physicians will hold their annual business and scientific meeting on Sunday, Oct. 5, at 3 p. m., in Parlors 1 and 2, at the Hotel William Penn, Pittsburgh.

All members of the American College of Chest Physicians and members of The Medical Society of the State of Pennsylvania are cordially invited to attend. Reservations should be mailed as early as possible to the Hotel William Penn. Further details with regard to the scientific meeting and banquet will be published in a later edition.

Edward Lebovitz, M.D., *Secretary,*
701 May Building,
Pittsburgh, Pa.

Civil Service Positions

Gentlemen:

The demand for qualified persons to fill medical positions in the government grows faster than the supply. The commission is now announcing examinations to secure qualified persons for 3 types of medical positions—Junior Medical Officer, Medical Guard-Attendant, and Medical Technical Assistant.

The commission hopes to secure wide publicity on these examinations and the inclusion of a notice in your publication would be highly valuable in advising qualified persons of the government's national defense needs.

The examination for Junior Medical Officer will be open until Nov. 15, 1941, and the examination for Medical Guard-Attendant and Medical Technical Assistant, until further public notice. If you cannot publicize the examinations in the issue of your publication now in preparation, it is hoped that you may find it possible to include it in a future issue.

By direction of the commission:

Wm. C. Hull, *Executive Assistant,*
United States Civil Service Commission,
Washington, D. C.

The notice of the examinations referred to in this letter is printed on page 1550 of this issue. —The Editors.

Oleovitamin A and D

Gentlemen:

I am sending you a copy of the Interim Revision Announcement just issued by the Pharmacopoeia announcing a new U.S.P. product under a new official title, "Oleovitamin A and D."

Because of war conditions, the supplies of cod liver oil have been greatly reduced and the price advanced. To meet the situation, under the advice of the U.S.P. Vitamin Advisory Board the Pharmacopoeia has established specifications and standards for a solution of

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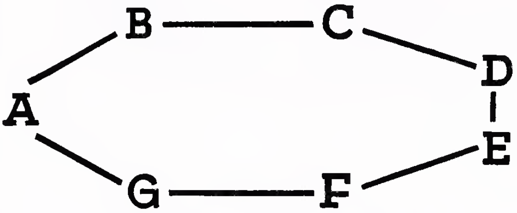

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Persons interested in obtaining copies of the U.S.P. Interim Revision Announcement should write to the chairman's office, 43rd and Woodland Ave., Philadelphia, Pa.

E. Fullerton Cook,
General Chairman of the U.S.P.
Committee of Revision.

New Award

Gentlemen:

The American Neisserian Medical Society announces an annual prize of $100, to be known as the P. S. Pelouze Award, to be presented to the person under 35 years of age who, in the opinion of the Committee of Awards, has made the outstanding contribution to the control of the gonococcal infections during the preceding year.

Nominations for the award should be sent to the secretary not later than March 31 of each year. The winner will be announced at the subsequent annual meeting of the society.

Oscar F. Cox, M.D., *Secretary,*
American Neisserian Medical Society,
475 Commonwealth Avenue,
Boston, Mass.

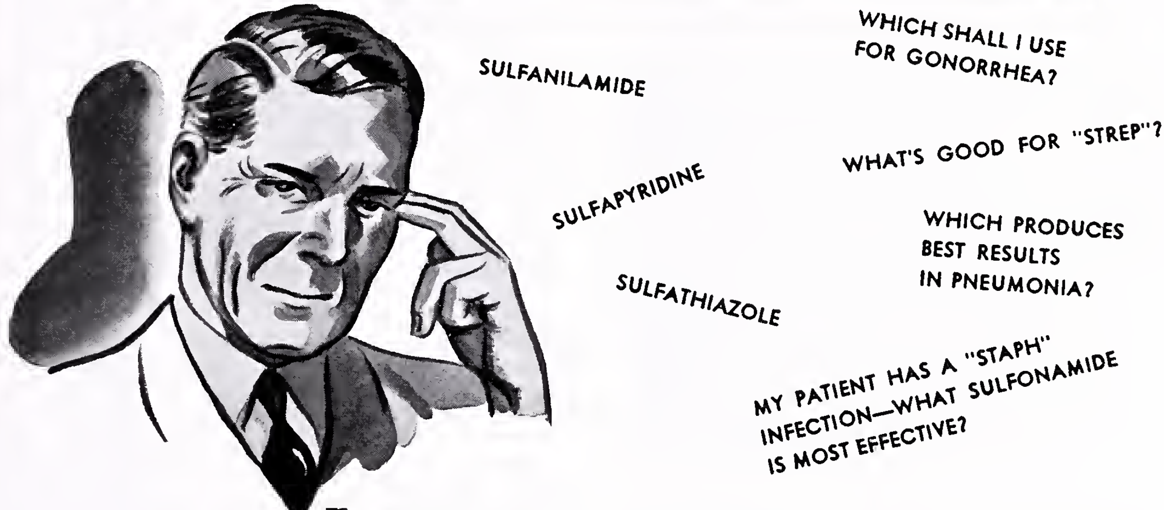
COMPULSION RETREATS

The shelving of compulsory health insurance in the California legislature without this year's bill even coming to a vote evidences afresh the recession of public interest. Among the states, the proposed system has made its largest bid in California. Four years ago, however, it was beaten 46 to 24 in the Assembly, and two years ago 48 to 20. This year the plan was tabled by a Senate committee, and in the Assembly it was not even voted upon by committee, as far as the records show.

The movement for compulsory health insurance in the United States has in fact been declining ever since President Roosevelt put aside enabling legislation 18 months ago. The immense cost officially estimated as at least $2,500,000,000 a year for national coverage, the huge new taxes, the drawbacks of the bureaucratic medical service, the hostility of the organized medical profession, the advent of voluntary health insurance—plus the war—have combined against the project. Fortunately, the country has so far escaped being rushed into a mammoth insurance venture through popular ignorance of its failings.—*The Christian Science Monitor.*

To know how to wait is the great secret of success.

Do You Know Your Sulfonamides?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The sulfonamide compounds continue to grow in importance. Three separate drugs have been accepted by the Council on Pharmacy and Chemistry of the A. M. A. Another has been submitted for acceptance. We present on this page the "box score" on three "sulfa" drugs now in widespread use.

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CHEMICAL NAME	(p-amino-benzene sulfonamide)	(2-sulfanilyl aminopyridine)	(2-sulfanilyl aminothiazole)
SOLUBILITY in 100 cc. of water at 37.5° C.	1480 mg.	54 mg.	96 mg.
PHARMACOLOGY Absorption	Relatively uniform and rapid.	Irregular and often poor.	Uniform—very rapid.
Distribution	In all body fluids.	In all body fluids.	In blood but poorly in other body fluids.
Excretion	Rapid.	Slower than Sulfanilamide.	Rapid.
Tendency to conjugation.	Slight.	Marked.	Moderate.
CHEMOTHERAPY ★Preferred Drug. ●Also Effective.			
Colon Bacillus			★
Dysentery Bacillus			●
Gonococcus		●	★
Lymphogranuloma Venereum	●	●	★
Meningococcus	●	★	●
Pneumococcus		★	★
Staphylococcus		●	★
Streptococcus	★	●	
HOW SUPPLIED BY SQUIBB Tablets	5 grain in bot. of 100, 500, 1000. 7½ grain in bot. of 25, 100, 1000.	0.5 gram in bot. of 50, 100, 1000.	0.5 gram in bot. of 50, 100, 500, 1000.
Powder	4 oz. Rx. bottle.	5 gram vials.	
Crystals	1.0 gram ampuls, box of 5 and 25.		5 gram vials.
Capsules		0.25 gram in bot. of 50, 100, 1000.	

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Beaver	Philip F. Martsolf, New Brighton	J. Willard Smith, Beaver Falls	Monthly
Bedford	Edward A. Shields, Bedford	James R. Myers, Everett	Monthly
Berks	Chester K. Kistler, Reading	Clair G. Spangler, Reading	Monthly
Blair	Ralston O. Gettemy, Altoona	Harry D. Collett, Altoona	*Monthly
Bradford	J. K. Williams Wood, Troy	Stanley D. Conklin, Sayre	Monthly
Bucks	Albert A. Gonzalez, Croydon	J. Fred Wagner, Bristol	6 a year
Butler	Max S. Nast, Butler	Ralph M. Christie, Butler	*Monthly
Cambria	William B. Templin, Johnstown	Paul McCloskey, Johnstown	Monthly
Carbon	Susan Tomchik, Lansford	John L. Bond, Lehighton	Bimonthly
Centre	H. Thompson Dale, State College	†Le Roy Locke, Bellefonte	Monthly
Chester	Robert T. Devereux, West Chester	Joseph Scattergood, Jr., West Chester	Monthly
Clarion	Edward J. Keeling, Clarion	James M. Hess, Fryburg	Quarterly
Clearfield	Richard L. Williams, Houtzdale	George R. Taylor, Philipsburg	Monthly
Clinton	Robert F. Dickey, Lock Haven	Henry G. Hager, Jr., Lock Haven	Monthly
Columbia	Howard R. Rarig, Berwick	†Claude W. Ashley, Bloomsburg	Monthly
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Cumberland	Charles M. Shaffer, Carlisle	Richard R. Spahr, Mechanicsburg	Bimonthly
Dauphin	Howard K. Petry, Harrisburg	Harvey A. Simmons, Harrisburg	*Monthly
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Elk	Charles N. Silman, St. Marys	Fred E. Murdock, St. Marys	*Monthly
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Fayette	Fred H. Harrison, Connellsville	John N. Snyder, Masontown	Monthly
Franklin	Frank J. Corbett, Fayetteville	Ambrose W. Thrush, Chambersburg	Monthly
Greene	Vinton P. King, Waynesburg	William W. Bartholomew, Waynesburg	Monthly
Huntingdon	Frederic H. Steele, Huntingdon	Donald C. Malcolm, Alexandria	Monthly
Indiana	Frederick S. Shaulis, Indiana	Joseph W. Gatti, Indiana	Monthly
Jefferson	Sylvester S. Hamilton, Punxsutawney	Francis J. Trunzo, Punxsutawney	Monthly
Juniata	‡Penrose H. Shelley, Port Royal	Robert P. Banks, Mifflintown	Bimonthly
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Lancaster	Harry C. Fulton, Lancaster	Charles P. Stahr, Lancaster	Monthly
Lawrence	H. Cyrus Harper, New Castle	William A. Womer, New Castle	Monthly
Lebanon	Edward L. Jones, Lebanon	J. DeWitt Kerr, Lebanon	*Monthly
Lehigh	Paul C. Shoemaker, Allentown	J. Frederic Dreyer, Allentown	Monthly
Luzerne	Joseph V. Connole, Wilkes-Barre	Lachlan M. Cattanach, Wilkes-Barre	*Semimonthly
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McKean	Edward J. Phillips, Bradford	James E. Woodhouse, Bradford	Monthly
Mercer	Jonathan B. Perrine, Grove City	James A. Biggins, Sharpsville	*Monthly
Mifflin	Marlin W. Helfrick, Belleville	John R. W. Hunter, Jr., Lewistown	Monthly
Monroe	Moses J. Leitner, Bushkill	Harold B. Flagler, Stroudsburg	4 a year
Montgomery	George R. Irwin, Bridgeport	Walter J. Stein, Ardmore	*Monthly
Montour	Vincent J. Cassone, Danville	Sydney J. Hawley, Danville	Monthly
Northampton	Arthur B. Hamilton, Bethlehem	Dudley P. Walker, Bethlehem	*Monthly
Northumberland	George M. Simmonds, Shamokin	Mark K. Gass, Sunbury	*Monthly
Perry	William H Gelnett, Millerstown	Catherine Johnston, New Bloomfield	Bimonthly
Philadelphia	Louis H. Clerf, Philadelphia	Henry G. Munson, Philadelphia	*Monthly
Potter	Bernard S. Bretherick, Roulette	J. Irving Bentley, Coudersport	Bimonthly
Schuylkill	Peter B. Mulligan, Ashland	Charles V. Hogan, Pottsville	Monthly
Somerset	Bradley H. Hoke, Jr., Salisbury	Bradley H. Hoke, Meyersdale	Bimonthly
Susquehanna	James J. Grace, Montrose	Abram E. Snyder, New Milford	4 a year
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Venango	Cecil H. Hodgkinson, Oil City	Norman K. Beals, Franklin	Monthly
Warren	Tom K. Larson, Warren	Hilding A. Bengs, Warren	Monthly
Washington	George L. McKee, Burgettstown	Albert E. Thompson, Washington	*Monthly
Wayne-Pike	Hobart N. Owens, Hawley	H. R. Patton, Damascus	Bimonthly
Westmoreland	Paul G. McKelvey, Greensburg	Richard S. Cole, Greensburg	*Monthly
Wyoming	Van C. Decker, Nicholson	Arthur B. Davenport, Tunkhannock	Bimonthly
York	Herman A. Gailey, York	H. Malcolm Read, York	*Semimonthly

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* Except July and August.

** Except June, July and August.

† Acting for Secretaries Hoffman, Moser, Benz, and Egbert who are in military service.

‡ Acting for President Dawe.

As an Adjunct in the Treatment of ALCOHOLISM

ONE of the newest and most interesting uses for which Benzedrine Sulfate has been accepted by the Council on Pharmacy and Chemistry of the A. M. A. is as an adjunct in the treatment of chronic alcoholism and also in alcoholic psychoses, although best results are reported in states of intoxication in which no psychosis is demonstrable. The articles listed below represent the most comprehensive work which has been done to date in this field.

Reifenstein, E. C. Jr. and Davidoff, E.: The Treatment of Alcoholic Psychoses with Benzedrine Sulfate—J. A. M. A., 110:1811, 1938.

Reifenstein, E. C. Jr. and Davidoff, E.: The Use of Amphetamine (Benzedrine) Sulfate in Alcoholism With and Without Psychosis—N. Y. State Med. J., 40:247, 1940.

Bloomberg, W.: Treatment of Chronic Alcoholism with Amphetamine (Benzedrine) Sulfate—New Eng. J. of Med., 220:129, 1939.[1]

[1] *Since this report, Bloomberg has enlarged his series to 60 cases which he reported on Dec. 28, 1940, at the annual meeting of the American Association for the Advancement of Science in Philadelphia. His results in this larger series were substantially the same as those in his original report.*

ADMINISTRATION

Initial dosage should be small (2.5 to 5 mg.) and should be increased progressively until the desired effect is obtained.

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ACUTE SEGMENTAL ENTERITIS

RICHARD H. MEADE, JR., M.D.
Philadelphia, Pa.

ALTHOUGH the general subject of segmental enteritis (terminal ileitis, regional ileitis) has been discussed quite extensively since the publication of the paper by Crohn, Ginsburg, and Oppenheimer[1] in 1932, there is still no knowledge of the etiology of the disease and still no certain method of treatment. The management of the advanced stage where irretrievable damage has been done obviously requires surgical excision, but even then reappearance of the disease in remaining segments not infrequently occurs. Whether or not the acute stage will always eventually progress to the chronic cicatrizing one is hotly debated and the only nonoperative treatment advocated has been the use of a bland diet. The object of the present communication is to report 8 new cases in the acute stage and to discuss the use of roentgenotherapy in this stage.

As first described by Crohn, Ginsburg, and Oppenheimer and later modified by Crohn and Rosenak[2] and others, segmental enteritis appears in 4 clinical stages, or types. In the first, the segment of intestine, usually the terminal ileum but occasionally the cecum, ascending colon, and upper small intestine, shows evidence of an acute inflammatory process which is not secondary to, or often associated with, inflammation of the appendix. The color of the serosa may be unchanged but is usually a shade of red. The size of the gut is increased up to 2 or 3 times that of the adjacent normal intestine, and this is felt to be due to the thickening of the wall with edema. At times the mesenteric portion can be felt to be thicker than elsewhere. Usually the transition from the normal to the involved intestine is abrupt, although in the proximal portion this may be gradual. The adjacent mesentery becomes involved as the enteritis advances. There may be injection of the surface vessels before the lymph glands become enlarged, but more frequently the lymph glands show hyperplasia before other changes in the mesentery are apparent. Later, thickening of the mesentery due to edema and infiltration occurs. A small amount of free clear fluid is usually present.

In 2 early cases operated upon by Koster,[3] small sections of the ileac wall were removed for study. They showed only a nonspecific type of subacute inflammation with beginning muscular hypertrophy. There was a marked infiltration of the wall with polymorphonuclears, lymphocytes, and plasma cells. In the more advanced stages small ulcers have been observed along the mesenteric border by Dixon,[4] and in the cases reported by Jackman[5] the mucosa was ulcerated more markedly along this area. The cellular infiltration of the wall was seen to become less marked as the serosa was approached. The mesenteric lymph glands show acute inflammatory changes. The appendix when involved shows changes only in its outer coats, indicating that it has been secondarily affected.

In the second stage of the disease the ulcerative process in the intestinal wall dominates the picture. In the third stage, hypertrophy and fibroplastic infiltration of the wall lead to stenosis and obstruction. In the final stage, perforations develop and lead to the formation of fistulas.

Etiology

Although segmental enteritis seems obviously to be an infectious process, bacteriologic studies carried out with great care in many cases have given widely divergent results. The negative findings of Pumphrey at the Mayo Clinic, as reported by Dixon, exemplify the usual experience. The incrimination of the dysentery bacillus by Felsen[5] and the finding of Streptococcus viridans in the blood of 2 acute cases by Mailer[6] indicate the stage of knowledge as to the true etiologic agent.

Not having identified the etiologic agent, one may question the inclusion of many of the reported cases under the same diagnosis. It may well be true that the differences in progress of apparently similar acute cases is due to a difference in etiologic agents as well as to the difference in virulence of the same organisms. Admitting this possibility, it is still true that

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Read before the Section on Surgery of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

most of the reported cases fit well into definite clinical groups.

Diagnosis

Preoperative diagnosis of the acute stage of segmental enteritis can rarely be made with any degree of accuracy. In the usual case the symptoms are those of an acute surgical condition in the abdomen and most frequently suggest acute appendicitis. In the slightly more advanced cases the recurring attacks of cramps suggest an acute but incomplete intestinal obstruction. In the occasional case there may be the picture of an upper abdominal catastrophe such as a perforated peptic ulcer or acute hemorrhagic pancreatitis. This was true of 2 of the Episcopal Hospital cases; in one an upper ileac segment was involved and in the other the disease was just proximal to the ileocecal valve. The usual symptoms of lower abdominal pain develop in a person who has previously been well. There is a mild degree of fever and leukocytosis, and tenderness is found in the right lower abdominal quadrant.

Treatment

Although there has been uniformity of opinion as to the management of the chronic forms of segmental enteritis, there has been a great deal of controversy about the treatment of the acute form. This has been due mainly to the difference in opinion about the progressive nature of the disease. Mixter[7] has expressed the attitude of one group in considering the acute stage always to be the forerunner of the chronic cicatrizing one and therefore advocating resection. The great majority of authors have considered that spontaneous resolution might occur and have therefore urged conservative measures. Most of the reports of acute cases which have been explored and then followed for a number of years without showing further evidence of their disease have been made by Rockey,[8] Rixford,[9] Lehman,[10] Eliason and Johnson,[11] Brown,[12] Koster, Kasman, and Sheinfeld,[3] Crohn,[13] and Probstein and Gruenfeld.[14] In all of these cases the only treatment was exploration and incidental appendectomy followed by the use of a bland diet during convalescence.

Only Mixter has considered appendectomy to be contraindicated, believing that it is unsound to remove an appendix that is not implicated as a causative factor in the disease in the face of an acute infection. In addition, he feels that the risk of establishing an external fistula is great in a disease characterized by the tendency to fistula formation. Eliason and Johnson, on the other hand, probably express the opinion of most other surgeons when they advocate the removal of the appendix on the ground that if it is involved in the inflammatory process, the lumen may become blocked and lead to perforation, and if not involved and the patient later has attacks of right lower abdominal pain, it will be difficult to rule out the appendix as the cause. In the more advanced stages of the acute process, when there is cloudy fluid or if the large intestine is involved, these surgeons advise the use of drains to guard against the effects of perforation.

Attempts to differentiate the cases of acute segmental enteritis which will recover spontaneously from those that will progress to the chronic form have been made by Meyer and Rossi.[15] They believe that the extent of mesenteric involvement indicates the subsequent course. When the mesentery is thickened and edematous, they consider that the ulcerative process in the ileum has probably perforated into the mesentery and that resolution will not occur. In most of the cases reported by Lehman, and by Eliason and Johnson, in which spontaneous recovery was followed by years of health, the mesentery was either not involved at all or only slightly so.

Before discussing any further the management of this condition, I should first like to report the cases from the Episcopal Hospital. Seven of the 8 patients were on the services of Drs. E. T. Crossan and I. M. Boykin, and I am indebted to them for permission to report their cases. Furthermore, the co-operation of the roentgenologists, Drs. M. L. Allen and Robert Barden in the treatment and follow-up studies of these patients has been indispensable.

Case Reports

Case 1.—A. C., a 6-year-old boy, was admitted to the hospital on Apr. 6, 1936, complaining of pain in the abdomen and vomiting. Three days previously he had awakened at 1 a. m. with severe pain in the abdomen and was unable to return to sleep. The pain was generalized and there were exacerbations of pain every 5 minutes. He was very restless and vomited at 4 a. m. Later in the morning he was seen by his doctor, who stopped everything by mouth except paregoric. He continued to vomit and have considerable pain. The vomitus was green in color. Milk of magnesia was given that evening, but no bowel movement occurred until 2 days later when a light watery stool was passed. He continued to desire food, but eating caused vomiting. He was brought to the hospital 3 days after the onset of symptoms.

His past history showed that he had bled profusely when circumcised and that he had occasional attacks of sore throat.

On examination he appeared acutely ill with flushed face. His throat showed slight injection of the pharynx and the tonsils were cryptic. The heart showed a sinus

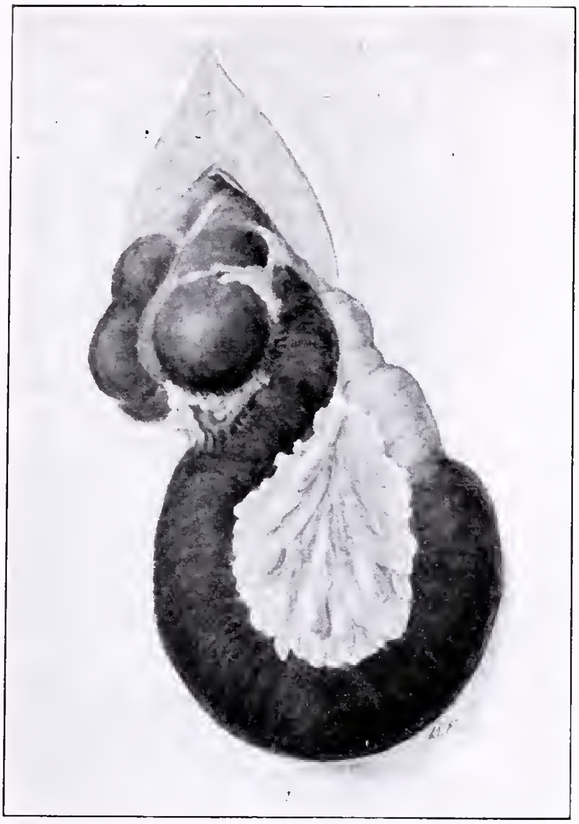

Fig. 1. Case 1. Appearance of the terminal ileum and cecum at time of the operation. There was marked redness of the involved intestine and adhesions attached the ileum to the appendix and to the cecum. The mesentery was slightly inflamed and its lymph glands large and juicy in appearance.

arrhythmia. The abdomen was diffusely tender and held spastically. In the right lower quadrant there was the greatest tenderness and muscle spasm. Peristalsis seemed hyperactive and the rushes were accompanied by paroxysms of pain. On rectal examination tenderness was elicited on both sides. The white blood count was 5600, polymorphonuclears 66 per cent, lymphocytes 26 per cent, and large mononuclears 8 per cent. The urine showed a light trace of albumin, a few white blood cells, and uric acid crystals.

A tentative diagnosis of intussusception was made and operation was performed under ether anesthesia. On entering the peritoneal cavity through a right rectus incision, a moderate amount of clear fluid was encountered (culture of fluid gave no growth). The large intestine was found to be distended and extremely mobile. A large portion of the small intestine was collapsed. In the ileocecal region the mesentery was found to be greatly thickened and studded with large juicy-looking glands. On lifting up the cecum it was thought that an intussuscepted mass could be felt within it, but further examination revealed the mass to be the thickened mesentery with its enlarged glands. There was reddening of the terminal ileum and cecum and marked thickening of the wall. The mesenteric portion of the ileac wall felt irregular and more thickened than the rest. There was no obstruction at the ileocecal valve. Adhesions covered over the cecum and terminal ileum and the appendix. The appendix seemed to be involved in the same inflammatory process as the ileum and cecum and was removed. The abdominal wall was closed in layers without drainage. Examination of the appendix revealed only a subacute inflammation of the outer wall (Fig. 1).

Because of the finding of the mesenteric lymphadenitis at operation, it was decided that roentgenotherapy would be helpful in view of the excellent results obtained in cases of cervical lymphadenitis. One hundred roentgen units of deep therapy were given to the entire abdomen the first day after operation. He continued to have attacks of abdominal cramps which were quite severe at times. During this time the abdomen remained soft and enemas were effectual for gas and feces. The temperature ran between 99 and 100 for 2 weeks and then went to 101.6, 102.8, and 101.6 on 3 successive days without demonstrable cause. After this it did not go above 100 (rectal temperatures) and he was discharged on May 7, 1936, in good condition, but still showing hypersensitivity of the periumbilical region. The day before leaving the hospital roentgenographic studies of the gastro-intestinal tract were done which showed several small localized areas of constriction of some of the ileac loops, together with some loss of the normal intestinal pattern in this region. Examination of the feces on two occasions failed to reveal ova, parasites, or a positive benzidine reaction.

Following his discharge from the hospital he was given 5 more roentgen-ray treatments in April, June, and July, 1936, and was symptom-free, but on Oct. 15, 1936, 6 months after operation, roentgenographic examination of the intestinal tract showed ribbon-like constriction of many of the loops of the ileum. He was readmitted to the hospital on Oct. 21, 1936, for study and for removal of the chronically infected tonsils which were thought to be possible foci of infection. During his stay he showed the same hypersensitivity of the abdomen previously noted and his tonsils were removed without incident. In March, 1937, he presented no symptoms and no abnormal physical findings, but roentgenographic study of the intestinal tract again showed evidence of ileitis with stringlike appearance and narrowing of several loops of the ileum which were not thought to be as marked as at the time of the examination in October, 1936. The boy has continued to develop normally and has had no further symptoms or physical signs of ileitis. However, repeated roentgenographic studies have continued to show evidence of anatomic changes in the terminal ileum without functional disturbance. The last examination was carried out by the use of a barium enema on Sept. 25, 1940, and a definite abnormality of the terminal ileum was demonstrated. This change consisted in slight narrowing of the lumen and serration of the margin, but there was no evidence of functional disturbance and it was thought that the changes demonstrated were certainly no greater than at the time of the first examination in October, 1936.

This case represents one in which a well-advanced acute regional enteritis involving the terminal ileum and cecum was treated by appendectomy and roentgenotherapy and has shown no evidence of progression of the disease during 4 years of careful study.*

Case 2.—G. W., a 50-year-old Negro man, was admitted to the hospital on July 23, 1937, complaining of severe abdominal pain. He had been in good health for many years before the onset of his present illness, but was seized with severe pain in the upper part of the abdomen 24 hours before admission. The pain persisted and was associated with vomiting on 3 occasions. On admission he was in a mild degree of shock with temperature 96.8, pulse 68, and respirations 22. He had rigidity and tenderness over the entire abdomen except in the left lower quadrant. Peristaltic sounds were normal. The white blood count was 8900. The urine showed a trace of albumin and a few red cells and epithelial cells. A diagnosis of acute perforated ulcer, or acute cholecystitis, was made in the receiving ward. A short time later, after having received morphine in preparation for his operation, tenderness was found to be limited to the right lower abdominal quadrant and there was no evidence of a generalized peritonitis. The diagnosis of acute appendicitis was then made.

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* This case was reported at the meeting of the Philadelphia Academy of Surgery on Oct. 5, 1936, in discussion of the paper by Ravdin and Rhoads on "Regional Ileitis and Fibroplastic Appendicitis," but due to a secretarial error the discussion when published in the *Annals of Surgery*, 106: 405, 1937, was credited to Dr. Damon B. Pfeiffer.

Under spinal anesthesia the peritoneal cavity was entered through a paramedian incision just to the right of the umbilicus and a small amount of clear fluid encountered in which were two small masses of gelatinous material. After a careful exploration of the upper part of the abdomen, the cecum was found to be undescended and the normal-looking appendix was in contact with the gallbladder and was removed. On exploring more of the lower part of the abdomen, a scarlet-red loop of the upper ileum presented (Fig. 2). Its walls were thickened to about 3 times that of the adjacent normal bowel. The mesentery of the affected loop showed slight reddening but very little thickening and there were no enlarged lymph glands. Peristaltic waves were seen to pass normally through this involved intestine. The abdominal wall was closed in layers without drainage. (The pathologic report on the appendix was "fibroid appendix.")

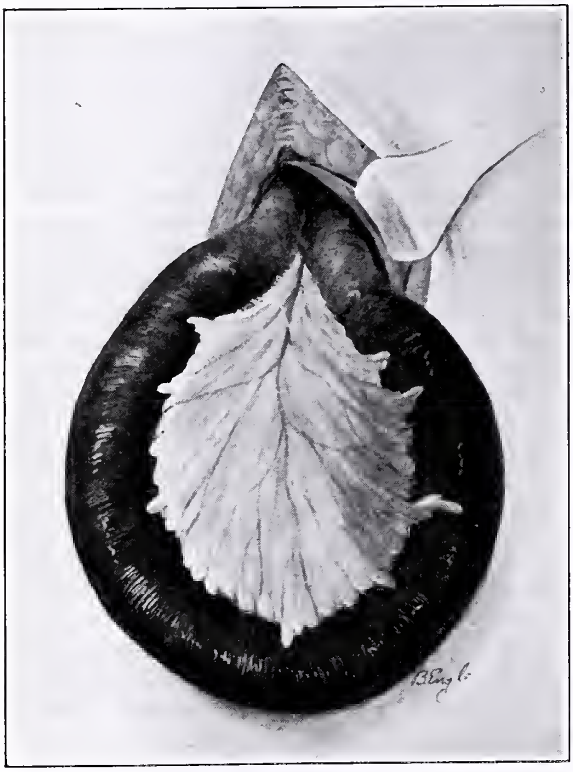

Fig. 2. Case 2. Appearance of the involved loop of ileum as seen at the operation. There was a scarlet redness of the serosa with marked thickening of its wall, also slight reddening of the mesentery, but no enlarged lymph glands were present.

Following the operation the temperature went to 102 the next day and fell to normal on the third day. The white count went up to 17,200 with 85 per cent polymorphonuclears on the day of elevated temperature and fell to normal a week later. There was mild abdominal discomfort for the first few days, but convalescence otherwise was uneventful. Two hundred roentgen units of deep therapy were given to the entire abdomen on the second postoperative day. Roentgenographic examination of the gastro-intestinal tract 12 days after operation showed no abnormalities. The patient was discharged in good condition on Aug. 5, 1937.

Attempts to get him back to the hospital for follow-up study were unsuccessful. Five months after his discharge his landlady reported that he had remained well. On Dec. 27, 1938, he was killed in an automobile accident and no autopsy was performed.

Case 3.—C. M., an 8-year-old white boy, was admitted to the hospital on May 11, 1938, complaining of abdominal pain. He had had 6 attacks of abdominal pain since October, 1937, which had not been associated with vomiting and had lasted for only an hour each time. The last attack started 5 days before admission, was accompanied by fever and nausea, and lasted for an hour. He was referred to the hospital by his doctor with a diagnosis of recurrent appendicitis.

On admission he was seen to be a healthy-looking boy not acutely ill. The abdomen showed slight tenderness in the right lower quadrant with no rigidity. The temperature was 100. The white blood count showed 15,600 cells. The urine was normal.

Operation was performed the next day by Dr. Boykin with a diagnosis of recurrent appendicitis. The distal ileum for a distance of about 15 cm. and the cecum were found to be thickened, somewhat edematous, and hyperemic. The appendix was kinked in the mid-portion and edematous at the tip. No involvement of the mesentery was noted. (The pathologic report was "normal appendix.")

His convalescence was complicated by the development of scarlet fever on the sixth day and he was transferred to his home under the care of his physician. A report on the patient received February, 1941, was that he had had no further symptoms.

Case 4.—O. O., a 38-year-old white man, entered the hospital on May 11, 1938, because of severe upper abdominal pain. He apparently had had symptoms of a peptic ulcer for 4 weeks prior to admission and had been put on a smooth diet and given powders by his doctor. The evening before the day of admission and several hours after his supper he began to have upper abdominal pain which rapidly became worse and soon was agonizing. He vomited the hamburger and beans eaten at supper. An enema was taken without success. The pain continued with such severity that he could not remain still, and after being given a sedative by his doctor was sent to the hospital.

On admission he was seen to be a well-developed and nourished man unable to stay still and groaning and moaning with the severe pain in his abdomen. He was covered with a cold and clammy sweat. The abdomen showed slight rigidity in the left upper quadrant, but no localized tenderness in spite of the excruciating pain throughout his abdomen and which extended into his back. His temperature was 98, pulse 120, and respirations 28. The white blood count showed 18,900 cells. The hemoglobin was 85 per cent and the red blood cell count 4,870,000.

With a diagnosis of acute hemorrhagic pancreatitis, or perforated peptic ulcer, he was operated upon by Dr. Weyand under spinal anesthesia followed by ether. On opening the peritoneal cavity, clear bloody fluid was encountered. The ileum was found to be markedly red and moderately edematous from a point about 12 inches above the ileocecal valve down to within 2 inches of it. (There was no notation about the appendix or the mesentery.) A careful exploration failed to reveal any other abnormalities. The appendix was not removed.

He was kept on intravenous fluids and suction drainage of his stomach for the first 3 days. The temperature remained slightly elevated for 4 days. On the fifth day he was given 235 roentgen units of deep therapy in the right lower abdominal quadrant and this was repeated on the next day. He refused a third treatment as he said it nauseated him. A roentgenographic examination before his discharge on May 29, 1938, showed no evidence of disease in the small intestine but showed irregularity of the tip of the cecum.

Since discharge he has been working steadily in a knitting mill and has had no symptoms except for a feeling of gas in the lower portion of the abdomen at times. His bowels have been regular and he has had no pain. He was seen Sept. 26, 1940, and again urged to return for roentgenographic studies, but without success.

CASE 5.—M. C., a 20-year-old white woman, was admitted to the hospital on May 25, 1938, complaining of cramps in the upper part of the abdomen. One week before she had had frequent bowel movements for one day. Since then she had had cramps in the epigastrium at intervals. She had had no nausea or vomiting. Three days before admission she took a dose of castor oil with good cathartic effect. The cramps became worse and pain localized in the right lower abdominal quadrant. She was advised by her family doctor to come to the hospital for an appendectomy, but waited two days before doing so.

On admission she was seen to be a well-developed and nourished woman not appearing acutely ill but complaining of pain in the abdomen. The abdomen did show slight rigidity in the right lower quadrant with definite rebound tenderness and there was a questionable mass in this region. Vaginal examination revealed an enlarged right ovary and on rectal examination there was tenderness on the right. The temperature was 100, pulse 108, respirations 24. The white blood count was 10,800.

With a diagnosis of subacute appendicitis the patient was operated upon by Dr. R. L. Layton under spinal anesthesia. The last 3 or 4 inches of the ileum were greatly inflamed, edematous, and boggy. The appendix was injected and was removed. (The pathologic report was "catarrhal appendicitis.") No mesenteric involvement was noted.

The convalescence was uneventful except that the temperature went to 101.6 the day after operation and then gradually fell to normal. She was discharged on June 6, 1938, in good condition.

All attempts to follow this patient have been unavailing.

CASE 6.—B. Z., a 9-year-old white girl, was admitted to the hospital on June 6, 1938, complaining of pain in the abdomen. Having previously been well, she began having pain in the abdomen associated with nausea 4 days before admission. Her bowels moved only slightly two days and one day before coming to the hospital, so two-thirds of a cathartic tablet was taken on the day of admission and a good movement resulted. The pain and nausea persisted, staying in the upper part of the abdomen all of the time.

Examination on admission showed a well-developed and nourished girl lying quietly in bed and complaining of slight pain in the lower part of the abdomen, more so in the left lower quadrant. The tonsils were hypertrophied and the pharynx slightly injected. The abdomen showed generalized tenderness more marked in the lower portions. There was slight rebound tenderness. Peristaltic sounds were markedly diminished. Rectal examination showed tenderness in the right side of the pelvis. The temperature was 100, pulse 100, respirations 20. The white blood count was 15,950 with polymorphonuclears 85 per cent, of which 73 were segmented and 12 nonsegmented, and lymphocytes 15 per cent. The urine showed a very occasional blood cell and epithelial cell. A diagnosis of acute appendicitis was made.

Operation was performed by Dr. Weyand. The appendix was found to be subacutely inflamed and the mesentery showed inflammation and enlargement of the lymph glands. The appendix was removed and the abdominal wall closed without drainage.

The patient's temperature rose to 104.6 the day of operation, and in spite of intravenous fluids and continuous suction drainage of the stomach her course was rapidly downhill with the temperature going to 106.6 the second day and remaining at 106 the third and final day.

Autopsy revealed an acute terminal ileitis with generalized peritonitis. The peritoneal cavity contained 200 c.c. of thin greenish fluid. The peritoneum was a cloudy gray color. The appendiceal stump was firmly closed and there was no inflammatory reaction about it. Starting at a point about 10 cm. above the cecum, the ileum showed a bluish-black color for a distance of 40 cm. A greenish-gray exudate covered this area, which was fibrinous in nature but could not be removed with forceps without tearing the gut wall. No perforation could be demonstrated by gentle compression, although the ileac wall seemed friable. On cut section the mucous membrane was dark red and edematous. The mesenteric lymph glands were markedly enlarged.

On microscopic examination of the discolored ileum it was seen that the serosa showed a marked exudate in which there were many polymorphonuclears. The submucosa was infiltrated with lymphocytes, plasma cells, and a few polymorphonuclears. Many portions of the muscle showed necrosis. There were areas of ulceration in the mucosa. Gram stain showed many organisms. Most of them were streptococci in chains and a few bacilli. Sections through several portions of the jejunum showed much the same picture as the discolored intestine. There was an exudate on the serosa and infiltration with polymorphonuclears, plasma cells, and lymphocytes throughout the wall. The mesenteric lymph glands showed an increase in connective tissue fibers and quite a few plasma and endothelial cells. No bacteria were seen.

Bacteriologic examination of the peritoneal fluid showed colon bacilli and intestinal bacilli. The lymph nodes showed diphtheroids and Streptococcus mitior viridans.

This was an unusual case which does not fit in well with the others reported and may represent a different disease process. It is reported here as a matter of record.

Case 7.—H. G., a 31-year-old white woman, entered the hospital Oct. 13, 1939, complaining of pain in the lower part of the abdomen. This pain had started as a sharp sticking one in the umbilical region shortly after breakfast on the morning of admission, and was followed by a dull aching and sense of soreness in the right lower quadrant, especially in the region of McBurney's point. These symptoms continued with temporary exacerbations of sharp pain. She vomited once about an hour after eating her lunch. She had been in good health prior to this illness except for occasional attacks of indigestion characterized by belching of gas.

On examination she was seen to be a well developed and nourished young woman lying quietly in bed. The only abnormal findings were tenderness and slight muscular rigidity in the right lower abdominal quadrant at McBurney's point. The temperature was 98.2, pulse 88, and respirations 24. The white blood count showed 16,000 cells with 74 per cent polymorphonuclears, of which 32 were segmented and 42 nonsegmented, 21 per cent lymphocytes, and 5 per cent mononuclears. A voided specimen of urine showed a faint trace of albumin and pus cells.

With a diagnosis of acute appendicitis she was operated upon by Dr. Ross and the lower 17 inches of the ileum were found to be discolored with small areas of petechial hemorrhages on the surface and on the mesentery. (No note was made about lymph glands.) The appendix showed an old obliterative process and was removed. String adhesions ran from the falciform ligament to the mesentery of the small intestine. The abdominal wall was closed without drainage.

Her convalescence was uneventful except that the temperature went up to 99.3 or 100.2 twice daily for two weeks. She was given roentgenotherapy starting the day after operation and received 100 roentgen units of deep therapy in the abdomen on Oct. 14, 16, 18, 20, and 23. She was discharged from the hospital in good condition on Oct. 25.

She has been followed closely since leaving the hospital and, except for occasional vomiting in February, 1940, and having a good deal of gas after eating fried food, she has been well. Roentgenographic examination of the intestinal tract in May, 1940, showed no organic change in the small intestine but showed slight delay in passage of barium through the ileum. Examination with the aid of a barium enema on Sept. 25, 1940, showed no evidence of disease.

Case 8.—E. D., 22-year-old white man, entered the hospital on Dec. 29, 1939, complaining of pain in the right lower portion of the abdomen of 5 days' duration. He had been perfectly well until the morning after a party at which he drank a moderate amount of alcoholic drinks. He began having dull aching pain in the lower part of the abdomen, which was more or less in the mid-line, felt nauseated, but did not vomit. The pain continued but his bowels moved regularly and he had no fever. Two days before admission the pain returned and was located in the lower mid-line and in the right lower quadrant. There was nothing significant in his past history.

On examination he was seen to be a well developed and nourished young man in very little apparent discomfort. The abdomen showed very sharply localized tenderness over McBurney's point and pressure between this and the umbilicus caused some discomfort but no real pain. The temperature was 99, pulse 122, and respirations 22. The white blood count was 12,600 with polymorphonuclears 65 per cent (segmented forms 48, nonsegmented forms 17), lymphocytes 32, mononuclears 2, and eosinophils 1. A diagnosis of acute appendicitis or Meckel's diverticulitis was made.

Operation was carried out under spinal anesthesia and the peritoneal cavity entered through a McBurney incision. There was a small amount of clear fluid. The terminal 8 inches of the ileum was twice the size of the ileum proximal to it with a sudden change from the normal. There was no change in color, but the bowel wall felt edematous and its thickening seemed to account for the increase in size. The adjacent mesentery was studded with large juicy-looking lymph glands. The appendix was only slightly injected but was removed. The abdominal wall was closed in layers without drainage. The pathologic report on the appendix was subacute inflammation (Fig. 3).

On the day after operation he was given a treatment of 100 roentgen units of deep therapy in the lower abdominal quadrants and was given 40 grains of sulfanilamide. The sulfanilamide was given in 20-grain doses every 4 hours during the next day and then 5 grains every 4 hours until his discharge on the eighth day after operation. The roentgen-ray treatment was repeated on the third and eighth postoperative days. His convalescence was uneventful with the temperature never going above 99.6. Some tenderness persisted in the region between the operative wound and the umbilicus.

Since leaving the hospital he has been carefully followed through the co-operation of his physician, Dr. Harasym. Except for being conscious of a good deal of abdominal gas at times, he has been perfectly well and examinations have failed to show any abnormali-

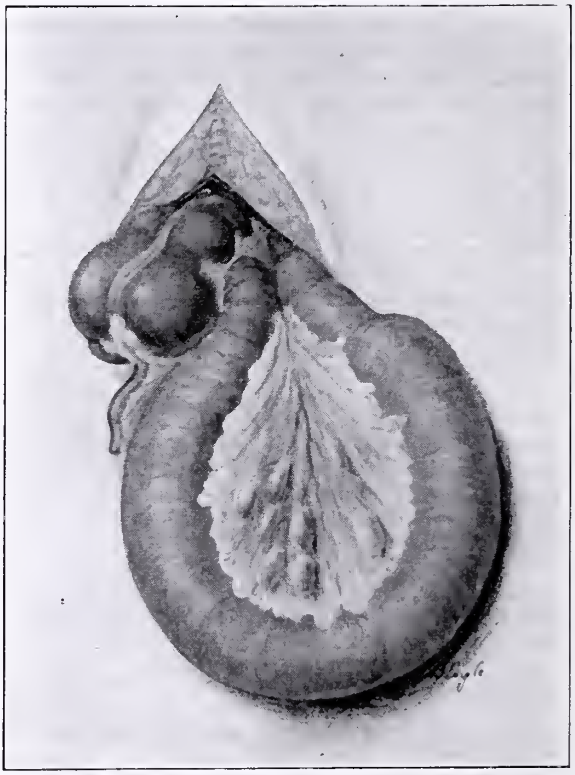

Fig. 3. Case 8. Appearance of the involved intestine at the time of the operation. There was no color change, but the terminal ileum was enlarged to twice the size of the intestine proximal to it. There was thickening of the wall, and the mesentery was studded with enlarged lymph glands.

ties. One month after discharge from the hospital a roentgenographic examination of the gastro-intestinal tract was done, which showed a rapid passage of barium throughout the tract indicating absence of any degree of ileitis. The ileum was obscured in the films by the sigmoid and rectum. Another study was carried out in September which showed no evidence of disease, and a barium enema done on Sept. 25 clearly showed the ileum to be free from any evidence of disease.

The results in these cases lend further support to the belief that most of the early acute cases will go on to spontaneous resolution. None of them have been followed sufficiently long, however, to preclude the possibility of recurrence. In the first case, which has now been followed for 4½ years, the process although acute was very extensive. Roentgenographic evidence of the disease is still present, but there has been no increase in extent and there have been no symptoms for more than 4 years. Whether or not roentgenotherapy has been responsible for the apparent arrest of the disease cannot be stated, but that it is a rational form of treatment seems obvious. Its use in two other carefully followed cases for 9 months and 11 months respectively may have contributed to their present freedom from evidence of the disease, although in similar cases the same results have occurred without its use. A fourth case in which it was used has shown no evidence of return of the disease after two years, but no roentgenographic studies have been made.

The increasing use of roentgenotherapy in the treatment of infections is known to all. Many articles have appeared in recent years discussing the biologic and clinical aspects of the subject, and although excellent results have been obtained, the manner in which it works has not been conclusively demonstrated.[16] The good results obtained in the treatment of acute diffuse inflammatory processes have been particularly striking. The presence of cellular infiltration without fibroplastic proliferation seems most suitable for effective attack, and this is true of the early acute forms of segmental enteritis. Heavy dosage should not be given, and if this is avoided, no harmful effects should follow even though no good is accomplished.

One other adjunct to treatment has been the use of sulfanilamide. Undoubtedly many others have tried this and the related drugs, but I have not yet seen any reports in the literature. As more and more infectious processes have fallen before these drugs in spite of their etiology it would seem warranted to use them in the acute forms of segmental enteritis. Their use in the more advanced stages where tissue destruction and fibrous tissue proliferation have occurred would seem of less promise. The use of sulfanilamide in the last case in the Episcopal Hospital series was combined with roentgenotherapy, so that its value cannot be determined, but such a combination seems a logical one in our present state of ignorance as to the etiology of segmental enteritis.

Conclusions

From a review of the literature and a study of 8 cases of segmental enteritis operated upon at the Episcopal Hospital, the following conclusions have been drawn:

1. Segmental enteritis is a clinical entity.
2. The acute stage may undergo resolution spontaneously or as a result of treatment, or may be followed by progression to a chronic irreversible stage.
3. Treatment of the patient in the acute stage should consist in operative exploration and removal of the appendix, followed by the use of roentgenotherapy and the administration of sulfanilamide or sulfathiazole.
4. A bland diet and careful attention to the bowels should be given.
5. Careful follow-up of all patients should be done with periodic roentgenographic examinations of the gastro-intestinal tract.

Since this paper was read at the meeting of the State Society in October, 1940, another case of acute segmental enteritis has been observed on the service of Dr. Edward T. Crossan. This patient was a young boy who made an uneventful recovery. He was given sulfanilamide during the first 4 days, followed then by sulfaguanidine for one week. Roentgen therapy was not used.

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ABSTRACT OF DISCUSSION

Eldridge L. Eliason (Philadelphia): The essayist has brought out several interesting points in his instructive paper. First, he uses the term segmental enteritis rather than the original too restricting term ileitis. Segmental enteritis may affect any part of the small gut and at least the right half of the colon.

Second, in 6 of his 8 cases the diagnosis was erroneously made as appendicitis, one case as acute pancreatitis, and one as intussusception. This means 100 per cent diagnostic error. I infer no criticism of the several surgeons—merely a further expression of the error common to the rest of us.

Third, appendectomy was done routinely, but no resections, with 7 recoveries, no fistulas, and one streptococcic death. Incidentally, this patient died in 3 days, which is rather rapid unless secondary to a similar infection elsewhere, as the throat or blood stream.

The foregoing statements pretty well apply to the series of 15 acute cases reported by Eliason and Johnson to which Dr. Meade has graciously referred. Fourteen of our 15 cases were erroneously diagnosed appendicitis, and one as ruptured ulcer—again 100 per cent diagnostic error. We had 3 deaths, 2 of which were due to peritonitis. Appendectomy was done in the 14 cases operated upon. We are in accord in advising appendectomy and conservatism as to resection.

Dr. Meade's follow-up shows the recoveries enhanced, he thinks, by roentgen therapy. Our cases were symptom-free from 3 months to 6 years following conservative treatment. We used no drainage, no chemotherapy, and no roentgen therapy, although from now on I am inclined to consider both of the latter as possible therapeutic aids.

Dr. Meade's first case with roentgen therapy had roentgen evidence of disease—stringlike appearance and narrowing of ileum—4 years later. One wonders whether this persistence might have been enhanced or influenced by this therapy.

BACTERIOPHAGE THERAPY: II

In 1934 there was published in *The A. M. A. Journal,* under the auspices of the Council on Pharmacy and Chemistry, a series of articles on the status of bacteriophage therapy, by Drs. Eaton and Bayne-Jones. Recently the council felt that subsequent developments in this field might warrant a restudy of this subject. Dr. A. P. Krueger, professor of bacteriology at the University of California, and his colleague, Dr. E. Jane Scribner, kindly agreed to make the necessary study and to write a report. Their report has been adopted by the council and authorized for publication. After a thorough review of the literature, the authors present the following summary and conclusions:

1. The nature of bacteriophage is no longer in question. It is a protein of high molecular weight and appears to be formed from a precursor originating within the bacterium. There is evidence that the precursor likewise is a protein and that it is synthesized by the cell during a phase of accelerated metabolic activity. The process by which the inactive precursor is transformed into active phage is catalyzed by phage, i.e., the primary reaction is:

Inactive Phage precursor + Phage ——→ Phage

2. For all practical purposes phage production proceeds at a significant rate only when the environment permits bacterial growth and concomitant synthesis of precursor. The most prominent phase of bacteriophage, massive dissolution of the susceptible bacteria, takes place when enough phage has accumulated to raise the phage/bacteria ratio to the critical lytic threshold.

While phage action in vitro is spectacularly effective in bringing about bacterial destruction, bacteriophage in vivo operates on a much less efficient scale and plays a negligible part in the clinical application of phage. There is no substantial evidence that the spontaneous development of phage in the infected host has any bearing on the process of recovery.

Four alternative mechanisms by means of which lysates conceivably may exert a beneficial therapeutic effect include:

a. Phage-induced dissociation of less virulent variants from the original pathogenic invader.

b. Augmentation of phagocytic efficiency through phage action.

c. Stimulation of specific antibacterial immunity in the host by antigenic fractions of lysed organisms.

d. Activation of specific or nonspecific immune mechanisms of the host by entirely nonspecific elements in the lysate.

The first of these is of little more than possible significance, but the last 3 are unquestionably important and completely outweigh the long-overstressed theory that lysis of bacteria in vivo is responsible for the clinical successes of phage therapy.

3. The reported data on the use of phage in various diseases caused by bacteria are for the most part insufficient to establish phage therapy as a method of choice. Only rarely have these studies included an adequate bacteriologic background, control groups, or careful comparison with accepted therapeutic procedures. There is evidence, however, that a properly prepared lysate can serve satisfactorily as:

a. A vaccine for the treatment of certain diseases, e.g., some types of staphyloccic lesions.

b. An agent for the induction of nonspecific protein shock in syndromes in which at times such shock may be used to good purpose, e.g., typhoid.

c. A measure for enhancing the general resistance of an infected area when applied topically. This depends on its nonspecific action in mobilizing macrophages and microphages.

It is equally evident that phage solutions possess no measurable degree of superiority over well-known and accepted preparations employed for the same purposes; for example, bacterial vaccine and toxoid in carbuncles and furunculosis or typhoid vaccine in nonspecific protein shock therapy. Modern chemotherapeutic approaches to the treatment of a variety of conditions for which phage has been recommended (cystitis, pyelitis, gonorrhea, certain bacteremias) offer more chances of success than does phage.

While it has become almost axiomatic to state that the use of phage is entirely innocuous, we have not found this to be the case. The literature provides numerous accounts of reactions ranging from mild to severe following the injection, local application, or ingestion of phage, and animal experimental work has shown that lysates may contain enough soluble toxin or Reynal's spreading factor to be actually dangerous.

4. Although it is admittedly very difficult to arrive at definite conclusions regarding the efficacy of any therapeutic agent used for the treatment of certain diseases, the accumulated clinical data on phage are in some instances highly suggestive and warrant the continuation of further studies under thoroughly controlled conditions. This is particularly true of cholera (*J. A. M. A.,* May 10, 1941, p. 2160; ibid, May 17, 1941, p. 2269).

An Analysis of Certain Visual Problems Among Elementary School Children

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Introduction

RECENT studies on the psychophysiology of seeing have contributed new ideas, if not new concepts, of visual problems. More emphasis is placed on binocular vision, and more attention is given to near-point seeing problems. The mere mechanical refractive approach to the visual problems of both children and adults has proved to be quite inadequate. At least from the point of view of prevention, the sheer mechanical or anatomic approach is characterized by unmistakable elements of futility. In short, it appears that the dynamics of seeing merit consideration in the prevention and correction of seeing difficulties.

In both industry and the schools, greater significance is being attached to binocular vision. Industry is confronted with worker efficiency at certain near-point tasks as well as with laws regarding workmen's compensation. Educators and school psychologists are more concerned today about vision as it relates to the use of stereopticon slides, to reading problems, and the like. As a result, it is being discovered that a significant percentage of the population at all age levels is in need of corrective work. During the recent army examinations, a remark was made by one of the examiners that if we adhere to present rigid requirements, three-fourths of the applicants would not pass due to the condition of their eyes. It is fitting that we begin to investigate the seeing problems of children with the idea of prevention in mind. The question is now being asked, "How can these functional seeing difficulties be prevented?"

The problem must be viewed in terms of the whole status of the individual. Physical health is not a constant. The effect on innervation of the seeing mechanism is considerable during lowered vitality. For instance, there may be a lowered resistance to fatigue in the focus reflex. This could cause adverse changes in the relationship between accommodation and convergence. Many reports give the child with a low hypermetropia a clean bill of health with regard to his eyes. Such far-point considerations are of some value but do not begin to touch the whole state of his visual activity. Mental maturity and psychologic and social adjustments must all be considered. Trouble in the visual act, which after all is only a means to comprehension by the brain, could mean that the individual suffers a loss of comprehension. This may not be noticeable in a child with an excess drive in his make-up, but in others it may cause them to be dull students. Visual concessions may be made in the way of lowered stereopsis, suppression, loss of visual acuity, and functional myopia in order to maintain academic progress.

We must think binocularly from the outset and in terms of a diminishing binocular flux. There is, according to F. Bernard Chavasse, early mutability and later fixity of the ocular reflexes. We must secure indexes to the dynamic forces which have been identified as influencing the visual reflex. Attention to monocular far-point problems is not sufficient.

We have examined the eyes and studied the visual status of the fifth-grade school children of Huntingdon, Pa., in connection with studies made by the Reading Clinic of the Pennsylvania State College. This report is one of a series dealing with the total data obtained. The children were tested near the end of the school term when they had a chance to react to their visual tasks and before vacation had relieved them of sustained near-point activities. Manifest and cycloplegic refractions were done along with ductions, phorias, and cross-cylinder tests. Reading, intelligence, and Betts tests were also administered. No study has been reported in which these factors were taken into consideration. This report deals with the study of the seeing difficulties of these children.

Read before the Section on Eye, Ear, Nose, and Throat Diseases of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

Purposes of This Study

The chief purposes of this study follow:

1. To define certain visual problems of children at the fifth-grade level.
2. To determine the incidence of the seeing and ocular conditions of one fifth-grade population.
3. To secure an appraisal of both near-point and far problems.

Limitations of the Study

Among the limitations of this study, the following may be listed:

1. A total of 126 cases, the entire population in the fifth grade of the Huntingdon, Pa., schools were examined. Complete data were secured on 109 cases.
2. The average chronologic age was 11 years 1.5 months; the range, 10.0 years to 14.5 years.
3. The average I. Q. was 104.2 ± 14.1; the range, 63 to 137.
4. The data were collected in March, April, and May, 1940.
5. The manifest, cycloplegic, and symptoms were taken and recorded by the writer.
6. All other findings in connection with the total project were taken by members of the Reading Clinic staff of the Pennsylvania State College.
7. For those without corrections, the pre-cycloplegic tests produced approximately 45 manifest findings. These included stereopsis; near and far visual acuity with and without glasses (monocular and binocular); near-point of convergence; rotations and versions; external examination; ophthalmoscopic examination; habitual phorias far and near; interpupillary distance; retinoscopic findings at 3 distances; monocular and binocular subjective lens findings; distance and near phoria, duction, and cross-cylinder findings through subjective findings; monocular and binocular amplitude of accommodation; and relative accommodations through the subjective.
8. Cycloplegic examinations were done under homatropine and paredrine.
9. The stereopsis test used was the one screening test included in the Betts battery. These findings were taken by Agnes S. Austin and Bonnalee Brown.
10. The following targets were used:
    a. For distance vision, ductions, and phorias: projected Snellen Chart at 20 feet.
    b. For near visual acuity: A. M. A. Reading Test Card at 14 inches.
    c. Farmer's cross-cylinder grid.
    d. For vertical ductions at near: line and dot of Sheard.
    e. For other near-point findings: reduced Snellen Chart at 16 inches.
11. All findings were taken on a morning schedule.
12. No attempt has been made in this phase of the study to establish criteria to determine the need for orthoptics.
13. Statistical determination of the reliability of findings has not been made.
14. At this time no follow-up data are presented on the validity of certain experimental procedures.

Procedure

The test findings were taken in the following order:

1. Chief complaints.
2. Naked visual acuity for far and near (also with old correction, if any).
3. Near-point of convergence.
4. Interpupillary distance.
5. Ocular motility.
6. External examination.
7. Habitual lateral phorias for far and near.
8. Retinoscopic findings with fixation at 20 feet, 20 inches, and 40 inches.
9. Subjective findings, and visual acuity (O. D., O. S., O. U.) through the subjective.
10. Induced lateral phoria through subjective.
11. Prism convergence: blur, break, and recovery at 20 feet through subjective.
12. Prism divergence: break and recovery at 20 feet through subjective.
13. Vertical phoria and ductions at 20 feet through subjective.
14. Induced lateral phoria at 16 inches through subjective.
15. Dissociated cross-cylinder findings, with lateral phoria, at 16 inches.
16. Binocular cross-cylinder findings, with lateral phoria, at 16 inches.
17. Blur, break, and recovery findings with base-out prism at 16 inches through subjective.
18. Blur, break, and recovery findings with base-in prism at 16 inches through subjective.
19. Vertical phoria and duction findings at 16 inches through subjective.
20. Amplitude of accommodation: O. D., O. S., O. U.
21. Positive relative accommodation.
22. Negative relative accommodation.
23. Stereopsis (Betts screening test).
24. Cycloplegic examination.

The following criteria were used to determine the need for a lens correction:

1. An esophoria of 5△ or more through the manifest at 16 inches.
2. Less than 20/20 in either eye.
3. Less than 14/14 in either eye.
4. Astigmatism of .75 diopter or more.
5. Simple hypermetropia of 2.00 diopters or more; or of .75 diopter or more with symptoms unless contraindicated by exophoria.
6. Acceptance of any amount of minus lens (binocularly).
7. Anisometropia of .75 diopter or more.
8. Hyperphoria of 2△ or more at near or far.
9. Heterotropia.

Results

Complete data on this report and on the total study are on file in the Reading Clinic of the Pennsylvania State College. A much more detailed analysis of these data is being made and will be presented in subsequent publications. All available statistical procedures are being used to study the findings. This report deals largely with a summary of the results on symptoms (subjective and objective), manifest findings, and cycloplegic findings. The complete details of this study could not be reported within the space limitations of this presentation.

TABLE I

SUMMARY OF REPORTED SYMPTOMS

Symptoms	*No. of Cases*	*Per Cent*
No ocular discomfort or seeing difficulty	70	57.4
Headaches only	9	7.4
After close application 3		
After movies 3		
No specific time 3		
Eye ache only	6	4.9
After reading 3		
After movies 1		
After reading and movies 2		
Blurred vision only	9	7.4
At near 5		
At distance 4		
Tearing only	8	6.6
Burning only	5	4.1
Spots before eyes and burning	1	0.8
Spots before eyes and headaches	1	0.8
Headache and tearing	3	2.5
Headache and blurring	4	3.3
Headache and burning	1	0.8
Eye ache and blurring	1	0.8
Eye ache and tearing	1	0.8
Tearing and burning	1	0.8
Tearing and blurring	1	0.8
Tearing, burning, blurring, and diplopia	1	0.8
Total	122	100.0

1. *Reported Symptoms.* — Approximately 57 per cent reported no symptoms of ocular discomfort or visual inefficiency. The chief complaints were headaches, eye aches, blurred vision, tearing, and burning. These accounted for approximately 70 per cent of the complaints.

These data are summarized in Table I.

2. *Naked Visual Acuity.* — Approximately 30 per cent of the cases were referred on the basis of the monocular visual acuity for near, far, or both. It is interesting to note that approximately 19 per cent presented near-point visual acuity problems. The data are summarized in Table II.

TABLE II

SUMMARY OF REFERRALS ON VISUAL ACUITY TESTS

	No. of Cases	*Per Cent*
Non-referral on near and far V. A.	82	70.1
Referral on near and far V. A.	20	17.1
Referral on far-point V. A. only	13	11.1
Referral on near-point V. A. only	2	1.7
Total	117	100.0

3. *Ocular Motility.*—A total of 11.6 per cent of the cases evidenced faulty motility. Of the 14 cases with faulty motility, 5 or 35.5 per cent had 20/20 or better visual acuity. The data on ocular motility are summarized in Table III.

TABLE III

SUMMARY OF FINDINGS ON OCULAR MOTILITY

Condition	*No. of Cases*	*Per Cent*
Normal	107	88.4
Faulty rotations	2	1.7
Faulty versions	3	2.5
Faulty rotations and versions	8	6.6
Exaggerated head movements	1	0.8
Total	121	100.0

4. *Pathology.* — A total of 25.6 per cent showed evidence of pathology which would refer them for an eye examination. These data are summarized in Table IV.

TABLE IV

SUMMARY OF PATHOLOGIC FINDINGS

	No. of Cases	*Per Cent*
Blepharitis	11	9.1
Conjunctivitis	8	6.6
Blepharitis and conjunctivitis	7	5.8
Ptosis	1	0.8
Exotropia	1	0.8
Esotropia	1	0.8
Disseminated choroiditis	1	0.8
Corneal opacity	1	0.8
Normal	90	74.4
Total	121	100.0

5. *Summary of Other Functional and Cycloplegic Findings.* — Table V is a summary of phoria, duction, and accommodation findings.

6. *Lens Corrections.*—The criteria used for determining the need for lens correction yielded a substantial number of near-point problems. In terms of the criteria, 37.6 per cent was placed in the "no glasses" category. Of this group, a number were excluded by the one criterion dealing with adductive fatigue (convergence insufficiency). Criteria are being established to determine the need for orthoptics among those

TABLE V

SUMMARY OF OTHER FUNCTIONAL AND CYCLOPLEGIC FINDINGS

	No. of Cases	*Mean*	*Standard Deviation*	*Standard Error of the Mean*
1. Near-point of convergence	121	4.79	0.25	0.02
2. Habitual lateral phorias				
At 20 feet	116	0.09 Exo	2.57	0.24
At 16 inches	115	2.48 Exo	4.75	0.44
3. Induced lateral phorias				
At 20 feet	117	0.19 Exo	2.27	0.21
At 16 inches	116	2.81 Exo	1.71	0.16
4. Prism convergence (adduction)				
Blur: Distance	116	7.44	2.55	0.24
Break: Distance	116	21.22	5.83	0.54
Recovery: Distance	116	7.19	4.97	0.46
Blur: Near	116	18.25	6.25	0.58
Break: Near	116	21.66	5.61	0.52
Recovery: Near	116	6.40	6.58	0.61
5. Prism divergence (abduction)				
Break: Distance	116	7.10	3.20	0.30
Recovery: Distance	116	3.29	2.19	0.20
Blur: Near	116	17.95	4.45	0.41
Break: Near	116	21.52	3.77	0.35
Recovery: Near	116	12.47	6.44	0.60
6. Vertical ductions: distance				
Supraduction				
Break: Right	112	2.78	0.84	0.08
Recovery: Right	112	1.17	0.43	0.04
Break: Left	112	2.55	0.82	0.08
Recovery: Left	112	1.20	0.47	0.04
Infraduction				
Break: Right	112	2.04	0.73	0.07
Recovery: Right	112	0.94	0.42	0.04
Break: Left	112	2.15	0.91	0.09
Recovery: Left	112	0.98	0.48	0.05
7. Vertical ductions: near				
Supraduction				
Break: Right	113	3.37	1.47	0.14
Recovery: Right	113	1.62	0.87	0.08
Break: Left	113	3.21	1.58	0.15
Recovery: Left	113	1.66	0.93	0.09
Infraduction				
Break: Right	113	2.70	1.53	0.14
Recovery: Right	113	1.31	0.94	0.79
Break: Left	113	2.52	1.58	0.15
Recovery: Left	113	1.21	0.76	0.07
8. Retinoscope				
Fixation, 20 feet	118	+0.70	0.97	0.06
Fixation, 20 inches	118	+1.91	0.88	0.06
Fixation, 40 inches	118	+1.36	0.97	0.06
9. Subjective				
Spherical component	121	+0.42	1.15	0.02
Cylindrical component	121	—0.21	0.21	0.04
10. Cycloplegic				
Spherical component	115	+1.10	1.37	0.09
11. Cross-cylinder				
Dissociated	115	+1.78	0.98	0.07
Binocular	115	+1.44	0.98	0.07
12. Amplitude of accommodation				
O. D.	116	11.69	2.67	0.25
O. S.	116	11.66	2.64	0.24
O. U.	115	8.37	2.76	0.26
13. Positive relative accommodation	115	4.84	2.34	0.22
14. Negative relative accommodation	114	2.16	0.63	0.06

cases in both the "glasses" and "no glasses" categories.

Data on the need for lens corrections are summarized in Table VI.

TABLE VI

SUMMARY OF DATA ON NEED FOR LENS CORRECTION

	No. of Cases	*Per Cent*
No glasses	44	37.6
Glasses	48	41.0
Glasses for near only	25	21.4
Total	117	100.0

Summary of Results

The following is a summary of the results for all data except those presented in Table V:

1. Only 25.4 per cent of the population had been previously examined for glasses.

2. A total of 86.9 per cent of the population were not wearing glasses.

3. A total of 57 per cent reported no ocular discomfort or seeing difficulties. Of those with complaints, approximately 70 per cent reported headaches, eye aches, blurred vision, tearing, or burning.

4. A total of 29.9 per cent of the population would be referred on the basis of near and far visual acuity findings.

a. A total of 28.2 per cent of the population had less than 20/20 vision and, therefore, would be referred.

b. A total of 18.8 per cent of the population had less than 14/14 vision and, therefore, would be referred.

5. In addition to those referred on the basis of far-point visual acuity findings, 4.1 per cent of the cases was detected for referral by means of ocular motility findings.

6. Approximately 10 per cent of the cases showed a near-point of convergence beyond 8 centimeters; 12.5 per cent, beyond 7 centimeters.

7. Approximately one-fourth of the population had some pathologic finding and was in need of referral.

8. A total of 6.96 per cent of the cases evidenced a vertical imbalance of one-half diopter or more at distance; 9.5 per cent, at near-point.

9. The mean amount of spherical lens accepted for distance was as follows: subjective (or manifest) +.415; retinoscope +.70; and under cycloplegic +1.10.

10. A total of 62.4 per cent were found to be in need of lens corrections. Approximately one-third of the lens corrections would be prescribed for near-point activities only.

Conclusions

Within the limitations of this study the following conclusions appear to be valid:

1. From data on the relatively small percentage of the population previously examined, there appears to be a need for general education regarding proper care of the eyes.

2. It appears reasonable to conclude that all children should have a thorough visual analysis.

3. A substantial proportion of the fifth-grade population is aware of seeing difficulties.

4. On the basis of visual acuity tests, administered under office conditions, more than one-fourth of the school population would be referred.

5. Ocular motility and near-point of convergence should be studied on the basis of *cruciality* of near-point problems rather than on the basis of *frequency* of their occurrence.

6. A substantial percentage of the population is in need of referral on the basis of pathologic findings.

7. When the binocular functions at both near-point and distance are studied, more than one-half of the fifth-grade population is found to be in need of correction. This suggests the need for an appraisal of near-point tasks in school situations from the point of view of hygiene.

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ABSTRACT OF DISCUSSION

JAY G. LINN (Pittsburgh): Dr. Hunt's study of 126 fifth-grade children of Huntingdon, a town having I consider a somewhat higher standard of population than that of the state as a whole, is interesting when compared with the report of the survey of the freshman class of Dartmouth College made in 1936. In this there were 5 times as many persons examined—636. Thirty-six per cent of these showed no ocular defects, 28 per cent showed mild defects, 27 per cent moderate defects, and 9 per cent severe defects. It would be interesting if Dr. Hunt's findings had been classified in this manner, as his percentage of "no defects" was about the same.

Their most common symptoms were as follows:

1. Fatigue on reading, 86 cases.
    a. No ocular defect, 28 per cent.
    b. Refraction, 58 per cent.
    c. Aniseikonia, 63 per cent.
    d. Refraction and aniseikonia, 31 per cent.
    e. Motor, 8 per cent.
2. Headaches, 76 cases.
    a. No ocular defect, 35 per cent.
    b. Refraction, 32 per cent.
    c. Aniseikonia, 50 per cent.
    d. Refraction and aniseikonia, 21 per cent.
    e. Motor, 8 per cent.
3. Nervousness, tension, or depression, 41 cases.
    a. No ocular defect, 39 per cent.
    b. Refraction, 22 per cent.
    c. Aniseikonia, 37 per cent.
    d. Refraction and aniseikonia, 5 per cent.
    e. Motor, 12 per cent.
4. Car-train-seasickness, 90 cases.
    a. No ocular defect, 32 per cent.
    b. Refraction, 34 per cent.
    c. Aniseikonia, 51 per cent.
    d. Refraction and aniseikonia, 18 per cent.
    e. Motor, 6 per cent.

These figures compare rather closely with those found at Dartmouth over a period of 7 years. Their symptoms due to ocular motility defects were not nearly as high as Dr. Hunt's, which seem more nearly what one would expect; however, there is greater nervous stability developed in the years between fifth grade and college entrance. Aniseikonia is bound to be a prominent finding in all Dartmouth publications, especially those connected with refraction. So far it is still a laboratory condition as far as diagnosis and treatment are concerned.

In spite of the difference in descriptive terms, I believe that Dr. Hunt's figures approximate closely those of Dartmouth. It is quite interesting to note that there is so much similarity between fifth-grade and college entrance findings. Dr. Hunt finds a much larger proportion of near-point reading difficulty than would be expected in fifth-grade children.

There seems to be a greater proportion of pathology than might be expected, but since the work was done in March, April, and May, and approximately 50 per cent of the cases were conjunctivitis, this is probably largely seasonal.

Table V covers so much ground that it should have a great deal more explanation to be properly understood.

Sixty-two per cent does not seem an excessive proportion of children for whom glasses should be prescribed; however, is it not possible that many of us at times prescribe glasses when they are really not necessary simply because we do not know what else to do for the patient?

I feel that we can all agree with Dr. Hunt's conclusions, although I do not quite understand his fifth point.

Edward Jackson (Denver, Colo.): We must not lose sight of the fact that the accumulation of statistics as to the necessity of examination of school children's eyes becomes a basis for argument with populations.

The one point that impressed me as most important and fairly new in Dr. Hunt's paper, was his remark that we are concerned principally with failures at near-point use of the eyes and not at distance. All examinations have served as a basis for distance vision, but the near-point condition of the eye has not been recognized. It is not recognized by nurses or teachers when they "screen" a whole group of school children to find out which children are to be subjected to a careful ophthalmic examination and which are to be subjected to cycloplegics.

There is a very simple test which I have used principally on young children who do not know the alphabet. I have tried it on children 2 and 3 years old, and it is really an objective test of their near vision. I show the child a picture in which he is interested and in which there are fine details, or if the child knows the 9 figures that are learned in arithmetic or the alphabet, they can be used. Even memorial stamps that have been brought out by the Post Office Department can be used. I call attention to fine details to make a delicate test of near vision.

While I show the object to the child, I gradually bring it closer and closer to the eye, trying to keep the child interested in what he is looking at by asking questions about it. The child keeps looking, but presently there comes a time when he rears back. He has felt an excessive exertion for him of convergence or accommodation, or both. This is a very practical method of determining the near-point of accommodation or the near-point of convergence, within an inch or so. Repeated tests will show just where it is for each particular child.

I think this test ought to be applied universally in the examination of young children, and it is the youngest children in the school who are most in need of it.

The eyeball does not reach its full size until age 9, and sometimes not until age 12 or 15. The young child at 6 years of age may have eyes utterly inadequate as to near-point convergence and accommodation for school work, and this ought to be found out before he starts going to school.

S. Weir Newmayer (Philadelphia): It may be of interest to know the results with school children in a large city such as Philadelphia, where there exists a school population of about 300,000 and the eyes of every child are examined once a year. Our 100 medical inspectors find defective vision in 4 to 10 per cent of cases with a median of 7.5 per cent. That 7.5 per cent represents only those children who have defective vision and are not wearing glasses. If you add about another 7.5 per cent for those who are wearing glasses to correct defective vision, you will have about 15 per cent as our average number of cases with eye defects. These facts may be of interest to you in a discussion of Dr. Hunt's paper.

I believe that it is a sane procedure to study the eyes of school children in relation to the function of reading. Five thousand children who are non-readers are referred to me in a year for study of their eyes only. Of this number, I find that 50 per cent of the non-reading is due to some defect of vision. About one-half of these cases may be termed functional, such as an asymmetry of the skull in which there is a visual plane out of level, and the other 50 per cent of non-readers are due undoubtedly to some faulty technic that we use in the public school system in teaching children how to read; that is, we do not teach them letter recognition and phonetics. This may account for many cases of failure in reading.

DR. HUNT (in closing): The idea of this paper was to stimulate the taking of near-point findings. We are trying to find some criteria as to what is to be expected from the average child. The reason we used statistics was to determine whether we had a random population, and our population was a very reasonable sampling.

We are going to examine a series of college freshmen next and take a random sampling there. In the study reported in this paper we were fortunate in receiving complete co-operation from the Reading Clinic of Pennsylvania State College.

GOVERNMENT AGENCIES NEED MORE DENTAL HYGIENISTS

The number of dental hygienists secured as a result of an examination announced in January is not sufficient to meet the present needs of the National Defense program. Another examination has just been announced—this time on an "open continous" basis—for positions as dental hygienist at $1620 a year, less the usual 3½ per cent retirement deduction.

Hygienists assist dental surgeons in hospitals, clinics, and relief stations. Cleaning and polishing of teeth, mixing materials, sterilizing and cleaning instruments, and similar duties may be a part of the work. Appointments will be made in the U. S. Public Health Service, the Veterans' Administration, and the War Department.

To qualify, applicants must be *registered* dental or oral hygienists who have completed a full course leading to graduation from a recognized school of oral hygiene. In addition, 2 years of experience are required in oral hygiene in public health or school work or in a private ethical dental office. Graduate dentists will be accepted for the examination provided they have had this experience in oral hygiene work.

Persons rated eligible on the examination announced in January need not file applications for this new examination as the register of eligibles established as a result of the old examination will be combined with the register resulting from the new. Other persons are urged to file their applications with the commission's Washington office immediately, although applications will be accepted until further notice. Additional information and application forms may be obtained from any first-class or second-class post office or from the Civil Service Commission.

PROFESSION MUST BE READY FOR PROBLEMS OF POST-WAR PERIOD

More exciting news events in recent months have obscured efforts by some groups to get Congress to enact the so-called Schwert bill for the federal subsidization of physical education, recreation, and "guidance in healthful living," at a cost eventually of $200,000,000 annually.

As the measure was originally introduced (H. R. 10606 in the Seventy-sixth Congress) it included health education among its goals, but in the present bill (H. R. 1074) specific reference to health education has been eliminated. Regardless of that technicality, the objectives of its supporters are probably pretty much the same as they were in the first place.

In the fever heat in Washington provoked by the country's rapid approach to participation in war, this bill may be sidetracked, but, be that as it may, the significant thing is that this is something in the wind. In the era of reconstruction after the shooting stops, something of this sort will be advanced.

That being the case, there are some important questions for physicians to be thinking about. To what extent is the medical profession going to insist on having a voice in health education? Is health education, under the aegis of a federal subsidy, likely to lead to some broader health program which would be unacceptable? If health education in the public schools is expanded through some such subsidy, should the medical profession insist that teaching materials are sound and teachers qualified? If so, is the profession ready to co-operate with educators to work out standards and curricula? These are matters which warrant attention. —*The Ohio State Medical Journal.*

LIQUOR AND HATS

In 1939 the United States National Safety Congress reported that a blood volume above 0.15 per cent alcohol should be considered as evidence that the driver is under the influence of alcohol, a stand so strict that it was soon modified. At the other extreme we find a certain judge in New London only a few weeks ago acquitting a woman charged with operating an automobile while under the influence of liquor on the ground that she was not under the influence of liquor at the time of the collision *but that the liquor she had consumed took effect after she had been arrested and locked up at the police station.*

The menace from intoxicated drivers at the wheel grows no less with each passing year. Attempts have been made to devise foolproof tests indicating the presence or absence of alcoholism, but as yet these have not been too successful. That there is extensive drinking among motorists was proven some time ago by the New York State police in surprise tests of the breath of motorists at Mineola. These showed that 58 out of 100 late night and early morning motorists had been drinking.

Other driving hazards besides alcohol have been enumerated. One of these hazards is said to be produced by women who wear hats partly or almost completely covering one eye. One might even speculate on the possibility of such a hazard having its effect upon a judge to the extent that he would be unable to determine whether or not the gentle culprit was intoxicated, had been intoxicated, or was about to be intoxicated. Stranger things than hats have upset the course of the law, but drunken driving is too serious to be thus winked at. — *Connecticut State Medical Journal.*

Correlation of X-Ray and Autopsy Observations

SYDNEY J. HAWLEY, M.D.
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SINCE the shadows on roentgenograms are expressions of normal and gross morbid anatomy, it is apparent that the information gained from postmortem examination is of special interest to the roentgenologist, as he must interpret what he sees on his roentgenograms in terms of gross morbid anatomy. With this thought in mind, confirmation or denial of the roentgen-ray reports was sought in the autopsy records of those patients where comparison could be made. In some cases the time between the x-ray examination and the autopsy was so long that comparison could not be made. Fifty per cent of these patients died of some form of malignant tumor. Pulmonary tuberculosis and lung abscess accounted for the remainder. These are not included in the study.

Four hundred and twenty-eight roentgen-ray observations were found comparable in 261 patients who came to autopsy. In most instances a single definite diagnosis was not made by the roentgenologist, but the gross morbid anatomy was described, and the most likely causes enumerated. Rarely was sufficient clinical information available at the time the x-ray report was made to establish a differential diagnosis.

The roentgenologic observations classified according to the part of the body examined are shown in Table I.

Table I

The Number and Per Cent of the Roentgenologic Observations Made of Various Systems of the Body

System	*Number*	*Per Cent*
Respiratory system	207	48.3
Gastro-intestinal tract	87	20.3
Circulatory system	86	20.2
Genito-urinary tract	25	5.8
Osseous system	23	5.4

Respiratory Tract

The correlation of roentgenologic and autopsy observations of the respiratory tract are shown in Table II.

From the roentgenologist's point of view the correlation is gratifyingly high. No errors were detected in the following conditions: normal lungs, silicosis, passive congestion, atelectasis, carcinoma of the bronchus, mediastinal metastasis, pneumothorax, diaphragmatic elevation, drowned lung, mediastinitis, substernal thyroid, and sarcoid. Most of these conditions are so obvious that no errors should be made.

A study of the errors is illuminating. The errors in the pneumonia group are not as bad as the figures appear. In one case a diagnosis of lobar pneumonia of the right upper lobe was made in a child 11 months old. The lesion turned out to be a large endothelioma of the pleura which occupied the volume of the upper lobe. In another instance an infarct was incorrectly named pneumonia. The 5 cases in which pneumonia was found at necropsy but not found on x-ray examination are probably unavoidable errors. In one instance the pneumonia was concealed by a large pleural effusion. In another case the only x-ray examination was made at the bedside. The patient was moribund and very obese. No mottling was seen in any part of the lungs. In the left lower part of the chest there was a massive density which was thought to be pneumonia. The autopsy disclosed a miliary tuberculosis with a large pleural effusion. The other 3 were terminal bronchopneumonia cases found at autopsy from 2 to 5 days after the x-ray examination had been made.

The one pleural effusion that was missed was in a patient who died of pneumonia. The effusion, which was small, was hidden by the consolidated lung.

The one mediastinal tumor which was missed might have been discovered had the patient lived long enough for more complete study. The x-ray film showed a moderate bilateral effusion. Review of the film after autopsy revealed a widening of the mediastinum which was not given sufficient attention ante mortem. The tumor was metastatic from a hypernephroma which was not diagnosed before death.

Read before the Section on Clinical Laboratory Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

Table II

Correlation of Observations on the Respiratory Tract

Observations	*Confirmed by Autopsy*	*Not Confirmed by Autopsy*	*Found at Autopsy Not by X-ray*
Pneumonia	39	2	5
Normal lungs	36	0	0
Pleural effusion	33	0	1
Silicosis	13	0	0
Metastasis to lungs	11	0	0
Passive congestion	9	0	0
Atelectasis	8	0	0
Mediastinal tumor	7	0	1
Tuberculosis, probably active	7	0	0
Pleural thickening	6	0	0
Lung abscess	5	0	2
Carcinoma of bronchus	4	0	0
Bronchiectasis	4	0	1
Healed tuberculosis	3	0	2
Miliary tuberculosis	3	1	1
Diaphragmatic elevation	3	0	0
Drowned lung, bronchial obstruction	3	0	0
Metastasis to mediastinum	2	0	0
Pneumothorax, spontaneous	2	0	0
Mediastinitis	1	0	0
Substernal thyroid	1	0	0
Sarcoid	1	0	0

One unrecognized lung abscess was concealed by a large pleural effusion and so was impossible of detection. The other was considered pneumonia. Apparently at the time of examination the cavity was filled with pus and not air, as no cavity or fluid level was seen.

The patient whose bronchiectasis was not identified before death showed normally appearing lungs on the stereoscopic examination. No studies were made with lipiodol. The bronchiectasis was in the left lower lobe behind the heart. This type of error is common and unavoidable when lipiodol studies are not made.

The question of healed tuberculosis with two recorded errors here is a hard one to evaluate. Both of these were minimal sized scars, but visible on the film. They were not regarded as of sufficient importance to be reported. In this connection there were two types of findings where correlation was not satisfactory. The pathologist frequently reported "healed apical pulmonary tuberculosis" from pleural scars which were too small to show on the x-ray film. The roentgenologist found Ghon tubercles frequently which were not reported by the pathologist. As it is doubtful if these two findings are of great significance except for statistical purposes, they have been disregarded in this report.

The errors in the miliary tuberculosis group are interesting. The films of the patient who was reported by the roentgenologist as having miliary tuberculosis, in error, showed a uniform fine mottling due to metastasis from carcinoma of the pancreas. The other patient had multiple small abscesses associated with acute endocarditis.

One other error should be mentioned. One of the mediastinal tumors was thought to be Hodgkin's disease, and the patient was treated accordingly. At necropsy the lesion was found to be a carcinoma of the thymus.

One statement frequently found in the x-ray reports was "peribronchial thickening," usually in otherwise normal chests. In no instance was there a pathologic condition found at autopsy which might account for such an appearance. It appears that the common roentgenologic term "peribronchial thickening" has no anatomic basis and should not be used.

Gastro-intestinal Tract

The results of the correlation of examinations of the gastro-intestinal tract are shown in

Table III

Correlation of Observations on the Gastro-intestinal Tract

Observations	*Confirmed by Autopsy*	*Not Confirmed by Autopsy*	*Found at Autopsy Not by X-ray*
Diseased gallbladder	14	0	0
Normal gastro-intestinal tract	12	0	1
Carcinoma of the colon	12	1	1
Intestinal obstruction	10	0	0
Carcinoma of the stomach	8	1	0
Intestinal distention, ileus	5	1	0
Normal gallbladder	3	0	0
Enlarged liver	3	0	0
Gastric ulcer	1	1	1
Absence of intestinal obstruction	1	1	0
Congenital atresia of the colon	1	0	0
Duodenal deformity, not ulcer	1	0	0
Normal colon	1	0	0
Carcinoma of the pancreas	1	0	0
Ruptured abdominal viscus	1	0	0
Acute ulcerative colitis	1	0	0
Jejunal ulcer	1	0	0
Normal esophagus	1	0	0
Duodenal ulcer	1	0	0
Duodenitis	0	1	0

Table IV

Correlation of Observations on the Circulatory System

Observations	*Confirmed by Autopsy*	*Not Confirmed by Autopsy*	*Found at Autopsy Not by X-ray*
Enlarged heart	43	1	0
Normal heart	19	0	0
Dilated Aorta	8	0	0
Pericardial effusion	8	0	1
Arteriosclerosis of extremities	2	0	0
Congenital heart disease	1	0	0
Mitral disease	1	0	0
Aortic aneurysm	1	0	0

Table III. In this series the number of cases of each kind is so small that it is not of very great significance.

No alibis are offered for the case reported as having a normal gastro-intestinal tract but which had a scirrhous carcinoma of the stomach. This was an error of interpretation.

The deformity in the case which was incorrectly diagnosed carcinoma of the colon was correctly represented on the x-ray film. At autopsy the deformity was found to be due to extensive adhesions distorting and narrowing the bowel, not to a malignant process. The case found at autopsy and not by x-ray was a small lesion in the hepatic flexure. It was big enough to be detected, and probably would have been by a more careful examination.

The case of carcinoma of the stomach which was found by x-ray and not at autopsy is an error that can hardly be charged to the roentgenologist. The lesion was a large retroperitoneal sarcoma. This produced the apparent defect in the stomach which itself was not involved.

The ileus which was not confirmed is difficult to understand. The patient was an infant 3 months old. The x-ray examination showed marked gaseous distention of the whole gastro-intestinal tract, but not the typical appearance of intestinal obstruction. The child died of uremia on the day following the x-ray examination, and at necropsy the intestinal tract was not distended.

Table V

Correlation of Observations on the Genito-urinary Tract

Observations	*Confirmed by Autopsy*	*Not Confirmed by Autopsy*	*Found at Autopsy Not by X-ray*
Normal genito-urinary tract	7	0	0
Hydronephrosis	5	0	0
Carcinoma of bladder	4	0	0
Kidney stones	2	0	1
Enlarged kidney	2	0	0
Kidney tumor	2	0	0
Ureteral stone	1	0	0
Bladder stone	1	0	0
Polycystic kidneys	1	0	0

The record in gastric ulcer looks worse than it is, because these are only 3 cases out of many correctly diagnosed in patients who did not die. In the case where the diagnosis was not confirmed, the only positive finding was a constant incisura. As the patient had had a massive hemorrhage, this was regarded as enough evidence of a gastric ulcer, though no niche was visualized. At necropsy the stomach was normal. The patient had a severe aortic stenosis. The patient in whom the ulcer was missed was a bad error for the roentgenologist, but he is not without a couple of good alibis. The clinical opinion was equally and independently in error. The patient was known to have had untreated syphilis. For some months he had had a midepigastric mass which was thought to be carcinoma of the pancreas. At the time of the x-ray examination the patient was very ill and quite uncooperative. He had peritonitis, which also was not diagnosed until autopsy. There was a displacement of the stomach and duodenum which led the roentgenologist, who did not find the ulcer, to concur in the diagnosis of carcinoma of the head of the pancreas.

Table VI

Correlation of Observations on the Osseous System

Observations	*Confirmed by Autopsy*	*Not Confirmed by Autopsy*	*Found at Autopsy Not by X-ray*
Metastasis to bone	8	0	0
Fracture of skull	5	0	0
Bone tumor	3	0	0
Mastoiditis	2	0	1
Osteitis deformans	1	0	0
Suppuration, frontal bone	1	0	0
Normal skull	1	0	0
Sarcoid	1	0	0
Acute osteomyelitis	0	0	1

The one patient who had an intestinal obstruction which was not found by x-ray represents an unavoidable error. The patient did not have barium by mouth nor a barium enema. Probably the distended bowel was filled with fluid instead of gas and so was not visible on the x-ray film.

The one patient who had a diagnosis of duodenitis in error was the victim of a duodenal ulcer.

Circulatory System

The correlation of the results of the examination of the circulatory system is given in Table IV. Here the correlation is almost perfect, although the series is small to be of much significance.

The one enlarged heart not confirmed was an error in judgment. The normal heart, in error, had a patulous foramen ovale, but was normal in size and shape. The pericardial effusion not seen on the x-ray examination was small and it is doubtful if it would have shown plainly enough to warrant a diagnosis.

A diagnosis of dilated or elongated aorta was made by x-ray many more than 3 times, but in only 3 autopsy records is a dilated aorta mentioned. Apparently in the other cases the aorta was not examined for dilatation or elongation at the autopsy.

Genito-urinary Tract

Correlation of the findings in the genito-urinary tract are not very significant, as there are so few of them. The results are tabulated in Table V.

The kidney stone which was missed was evidently a nonopaque stone, as a review of the film failed to reveal any shadow which could be interpreted as a stone shadow. No pyelogram or intravenous urogram was made.

The diagnosis of enlarged kidney is inadequate, but as no pyelogram was made, more detailed diagnosis was not possible.

Osseous System

Correlation was not complete enough in the examination of the bones and joints to be of much value, as these structures were rarely examined at necropsy. The results are given in Table VI.

The diseased mastoid that was missed was probably unavoidable. The patient was a child with underdeveloped and sclerosed mastoids on both sides. This was correctly identified, but the acute suppurative process was not, because it was masked by the sclerosis. The acute osteomyelitis was only of 4 days' duration and not sufficient disintegration of the bone had taken place to be recorded on the x-ray film.

Summary and Conclusions

A study is presented of the correlation of 428 roentgen-ray findings and autopsy observations in 261 patients.

It appears that the x-ray examination leaves only a little to be desired in the way of ante mortem representation of gross morbid as well as normal anatomy. The majority of errors are those of interpretation of the significance of the shadows. Many of these can be eliminated by closer consideration of the clinical findings in any given case, and more frequent use of repeat and serial examinations. These additional roentgen-ray studies would also increase the specificity of roentgen interpretation.

To the pathologist, two suggestions may be made. The osseous and articular portions of the body might receive more careful scrutiny and more attention might be paid to the mediastinal structures, particularly the aorta and the esophagus.

Surely it is advantageous for the pathologist and the roentgenologist to work in close harmony. The latter should attend all autopsies and should call the pathologist's attention to organs in which he is particularly interested. If possible, the radiologist should have his film with him and make a comparison of his findings with the autopsy at the time it is done. The ultimate goal of such co-operation would be the improvement of the intent and accuracy of observation of the roentgen ray.

ABSTRACT OF DISCUSSION

Carl J. Bucher (Philadelphia): It is well from time to time to take an inventory of what one is doing. Dr. Hawley is to be congratulated upon his careful study of the correlation between his findings in the roentgenograms and those at autopsy. Certainly it is a tedious job to go over the records and pick up all of these things.

Probably the pathologist learns as much from the radiologist as the radiologist learns from the pathologist. Certainly a postmortem examination is the end result of what has happened, the last chapter in the story of disease.

The radiologist, if he has followed the patient along during the course of an illness, often has a series of plates, and it is not only advantageous at the autopsy to look at the last plates but to look at the entire series. It frequently gives us more of the story than just looking at the result of the patients' disease as it is disclosed at the autopsy table.

The point about the dissection of the mediastinum is well taken. I wonder how many pathologists here ever look for the thoracic duct. It can be found, and it is not hard to find it. There are also a great many other structures in the mediastinum that could be studied but are overlooked. It is a great deal like the study of the gastro-intestinal tract. The reason we do not find more parasites in this part of the world is because many pathologists discard the intestines without opening them.

As far as the study of bones and joints is concerned, more thoroughness is desirable. Unfortunately, in this country, we are a sentimental people and we indulge in a great deal of sentiment toward our dead. Probably sometimes it is a little too much. If we could study bones and joints as they are studied in some of the European clinics, I am certain that more advancement in this field of pathology would be made in America.

Finally, I would like to direct attention to another phase of study after the autopsy has been performed and the radiologist has made his studies. The clinicopathologic conference is invaluable. Much can be learned. At Jefferson, Dr. Reimann and I inaugurated such a conference. No one was obliged to attend except a section of students, about 15, and the members of the staff. These conferences proved to be very popular, and apparently were instructive, since we had a voluntary attendance of from 75 to 125 men at each weekly conference.

Samuel R. Haythorn (Pittsburgh): The remark about the pathologist learning from the radiologist brings back some very fond memories. I was in the Boston City Hospital at the time that Dr. Francis H. Williams was making many of his original studies on the identification of the various small shadows that he found, particularly those in the chest. We did our autopsies beginning at 9 o'clock in the morning, taking those for autopsy who had died after noon of the day before, so that Dr. Williams had more time to study them than we do now.

These bodies were x-rayed after death, and they came over very frequently with 12-inch hatpins stuck in the sides of the chest, which would go directly to the object on which Dr. Williams wanted a report. After we had removed the sternum, we went to the point of the hatpin to see what was there, and made a description of it. Dr. Williams would be present to find out from the pathologist what it was that he had seen in his plate. Thus the roentgenologist and the pathologist learned from each other.

PROTECTION AGAINST EPIDEMICS WILL REQUIRE CAREFUL PLANNING

"Clearly the insulation of this country from the disease consequences of war will prove a colossal task and will require the most careful planning and effort," *The Journal of the American Medical Association* for Aug. 2 declares in an editorial on "War and the Spread of Epidemic Diseases." *The Journal* continues:

"Again the 4 horsemen of the apocalypse are riding. Once more war, hunger, disease, and death destroy mankind. The horsemen of today travel with the increased speed of mechanized transportation. Today the possibilities for sudden and widespread outbreaks of disease arising far from their endemic foci are more likely than ever previously.

"Among the endemic diseases which are kept from epidemic proportions only by the most stringent public health activities are malaria, yellow fever, typhus, and plague. News dispatches from Europe indicate already that typhus is being held in check only with the greatest difficulty. Indeed, with the fragmentary information available, it has probably reached serious epidemic proportions already in certain areas, especially Poland and the Balkans.

"No doubt plague, as far as this country is concerned, is a problem of greater potentiality. Epidemiologic data give definite information on the comparative permanence of endemic foci of plague infections in localities many years after epidemics of the disease have subsided. Once plague has appeared in a community, especially in cities with extensive port facilities, all known control measures for this disease must remain actively employed by the local public health agencies for prolonged periods. There can be no cessation of control measures. These demand the careful checking of the infectivity of fleas combed from rats and other rodents. This is done by the inoculation of selected and areanotated pools of fleas into guinea pigs, and the subsequent identification of the plague bacillus by suitable culture methods when evidence of the disease occurs in the guinea pigs.

"Although atmospheric conditions are still an obscure factor in the spread and periodic acceleration in virulence of many diseases, in plague relative high humidity and low and equitable mean temperatures seem to play an important part. Moreover, it is possible in areas in which the infection has remained subdued or dormant that atypical unrecognized lesions on necropsy may occur in rats; perhaps some of these rodents may be healthy carriers. Under such circumstances, inoculations of pools of fleas may become an important source of information.

"Reported plague infection has been recently proved in fleas from rats in San Francisco, from ground squirrels in Kern County, California, from ground squirrels in Ada County, Idaho, and from a marmot in Malheur County, Oregon.

"In San Francisco County the health department, with the assistance of the United States Public Health Service, has maintained a system of plague control since 1908, consisting of the enforcement of ratproof ordinances in buildings, trapping, poisoning, and examinations of the carcasses of rodents by necropsy, laboratory cultures when necessary, and, finally, in 1938, inoculation of pools of fleas into guinea pigs.

"In spite of the fact that the rat has always been regarded as the source of epidemics in human beings, the discovery of widespread distribution of plague in the ground squirrel and perhaps other rodents is not reassuring. To control this serious menace, there must be a careful integration of the control activities of cities, counties, states, and the federal government, with the use of trained personnel and the appropriation of adequate funds. If this is not done, the consequences may be indeed tragic."

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KANGAROO TAIL USEFUL FOR MORE THAN SOUP

Kangaroo tails—hitherto valued only as stock for soup—have been discovered to have unique value to medicine. According to an announcement by Australian Army Minister Percy Spender, medical research workers in Brisbane have discovered that tendons from the tails of kangaroos have special value in certain operations and in orthopedic surgery. Although Australia is the world's largest producer of catgut, which is obtained from sheep, kangaroo tail tendons are stronger and are replacing catgut in certain operations—*Australian News and Information Bureau.*

The Coroner and the Medical Examiner

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"IF THERE is virtue in antiquity, the coroner's office must have it."[1] It is definitely known to have existed in England as long ago as 1194 A. D., the coroner having maintained an important status as a representative of the crown and a conservator of the peace, bringing criminals to justice and acting in default of the sheriff. His most significant duty then, as now, was to hold inquests on the bodies of those supposed to have died either by accident or violence, or to have died in prison. His necessary qualifications were knighthood, property, and residence in the county.

Transplantation of the office to our system of government was natural enough, the duties, however, being confined largely to investigation of deaths occurring under unusual circumstances or without medical attendance, especially those in which violence or criminality are suspected. Briefly, the coroner must decide, after preliminary survey of a case, whether an inquest shall be held; if so, usually with the aid of a jury and evidence submitted by his deputies and medical assistants, he must bring to an issue not only the cause of death but also what person, if anybody, is responsible, and must initiate steps for the apprehension and indictment of any accused. He is authorized to take testimony of witnesses and order necropsy. Thus, the coroner assumes both the medical and preliminary legal aspects of criminal investigation.

Unfortunately, the coroner in this country was made an elective officer of the county, subject to the vagaries of partisan politics, none too well paid, and usually hampered by a budget too niggardly for the maintenance of a competent staff of well-trained, properly equipped assistants, ofttimes forced to employ meritorious vote-getters. Vance[2] points out the vulnerability of the office to pressure through political channels, sometimes to suppress or distort evidence, again to refrain from performing necessary necropsies in doubtful cases. Certainly many coroners are not influenced by such requests, but the temptation exists when re-election may depend on the favor of local politicians.

Although his duties are both judicial and medical, the coroner is rarely required to be a lawyer or physician, and seldom is. In Britain, where the office is still appointive, previous inadequacies in this respect were partially corrected as recently as 1926 by an amendment stating that the incumbent must be a "barrister, solicitor, or legally qualified medical practitioner of not less than 5 years' standing in his profession," the tenure of office being permanent with provision for pension. But even with these improvements the English system falls far short of the continental where institutes of forensic medicine assume major standing in university structure and where crime detection has attained high repute.

The coroner's physician is rarely a career pathologist and practically never devotes full time to the work, thereby being definitely handicapped in the duties expected of him. Nor can any blame be attached to the individual. It would be utterly ridiculous to demand that a physician give up his established practice for an inadequately salaried position, the tenure of which depends upon the uncontrolled will of the coroner and changes in party administration.

The coroner's physician is seldom an eyewitness to the actual scene of death with the body and environs undisturbed and very often must deal with an essentially medical problem on data furnished by police or a lay deputy coroner. In the main, facilities for complete medical survey of a case are lacking. Equipment for post-mortem examinations is usually mediocre, not uncommonly of the worst. How often is the coroner's physician handicapped, even at an impasse, in the final interpretation of his necropsy findings through lack of histologic, bacteriologic, and chemical studies?

"It is the strength of the medical examiner system that its organization is built on the basic principle that the cause of death must be determined solely by medical investigation." The scene of a death to be investigated must be

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Read before the Section on Clinical Laboratory Medicine of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

visited by the medical examiner who examines the body and inquires into the circumstances. If reasonably certain that death occurred from natural causes, he may issue the death certificate and file his report. Otherwise he has the power to require that a necropsy and any other necessary studies be performed and to take testimony of witnesses under oath, all data being meticulously recorded in the files of the case. If, after the medical examination is complete, there is any suspicion of criminality, it is the duty of the medical examiner to report the case to the district attorney in complete form, with establishment of the corpus delicti and satisfactory identification. Thereafter, the medical examiner offers unbiased testimony during prosecution of the case.

Vance[3] has presented an impressive picture of a well-organized, effectively functioning medical examiner's office in the city of New York, still undermanned, however, and with too limited a budget to care completely for the tremendous duties imposed by a metropolitan population. Again, the system affects only the city, rather than being state-wide as it is in Massachusetts. A weakness in the latter lies in the fact that outside of Suffolk County (Boston) the examiners are largely practitioners, not pathologists, so that at least some of the records lack uniformity and completeness. In Maryland the organization is too recent to permit evaluation.

The establishment of a Medical Examiner System to embrace the Commonwealth of Pennsylvania is proposed, to replace the county office of the coroner, the structure being somewhat as follows:

1. A *Medical Examiner Board,* composed of the professors of pathology of the several medical schools of the state, to select the chief medical examiner and the district chief medical examiners, and to approve the appointees of their staffs, to judge charges of incompetence or misdemeanor, and to have the power of dismissal.

2. A *Chief Medical Examiner,* who shall be a pathologist of wide experience in forensic medicine, to direct the activities of the state-wide offices, to recommend changes in organization and personnel, and to serve as a consultant to the district chief medical examiners.

3. *District Chief Medical Examiners,* who shall be pathologists of experience in forensic medicine, to direct the activities of local organizations (the number based on territory and population as deemed best for economy and effective operation), and to serve as consultants at views and postmortem examinations.

4. *Assistant Medical Examiners,* the number per district depending on the needs of the locality, who shall be physicians with at least one year's training in pathology and legal medicine, to conduct views and perform postmortem examinations.

5. *Deputy Medical Examiners,* at least one for each assistant medical examiner, who shall be young physicians of good standing, to assist at views and postmortem examinations, and to be responsible for the proper recording of data under the direction of their immediate superiors.

6. A *Clerical Staff,* composed of trained medical librarians, adequate for the legible transcription, proper filing, and cross-indexing of records.

7. A *Laboratory Staff,* composed of qualified workers in biochemistry, toxicology, bacteriology, hematology, serology, microtomy, and photography, which can be made up in part from the laboratories of hospitals in the various districts.

8. A *Central Laboratory,* well equipped for medicolegal investigative work, with satellite laboratories in districts where hospital laboratory facilities are inadequate.

The Medical Examiner's office should collaborate closely with the following organizations:

1. Police.

a. The primary duty of the police should be to protect the scene of death from any disturbance until the assistant medical examiner has completed his survey and recorded his findings.

b. The Medical Examiner's Office should have accessible to the police all data and objects from a case which might aid in the apprehension of the criminal.

2. District Attorney. The Medical Examiner's Office should furnish:

a. All data pertaining to cases thought to warrant further investigation.

b. Full assistance in the matter of records and unbiased expert medical testimony in cases which are being prosecuted.

3. Courts. The Medical Examiner's Office should furnish testimony in:

a. Criminal cases without fee.

b. Civil cases, the witnesses being permitted to charge a fee.

4. Press. Close co-operation could further accurate reporting and deter the publication of information detrimental to the apprehension and prosecution of criminals.

5. State Compensation Board. The Medical Examiner's Office, having jurisdiction over industrial accident cases, should make necropsies mandatory, furnish the board with records of

all cases, and thereby simplify the problems of the board in rendering just decisions.

6. Insurance Companies. Records should be available to assist in the proper settlement of insurance claims.

7. Department of Public Health. The facilities of the Medical Examiner's Office should be available to investigate causes of death which may present public health problems, such as infectious disease or food poisoning.

8. A close liaison should be established in the following manner:

a. Those designated by the Medical Examiner Board to augment laboratory and necropsy facilities should meet high standards of personnel and work, and should be paid for services rendered according to a fixed scale.

b. Necropsies on patients dying within 24 hours after admission, thereby designated "coroner's cases," should be performed by the hospital pathologist and the report submitted to the Medical Examiner's Office, which should have the right to rescind this privilege if the quality of work and completeness of records prove unsatisfactory.

9. Medical Schools. The medical examiner and his staff should constitute the faculty of a Department of Forensic Medicine in the several medical schools of the state and should establish an appropriate section in the pathologic museum in each school. The same could well apply to law schools.

The advantages of the Medical Examiner System have been proven. The analysis by Schultz and Morgan,[1] from which much of my material has been drawn, offers a clear condemnation of the old and outmoded coroner's office. It is obvious that the adoption of the proposed system would:

1. Withdraw the office from political interference.

2. Unify and vastly improve the investigation of death occurring under unusual circumstances, in close harmony with police and legal offices.

3. Force improvement in laboratory facilities, especially in rural districts, and maintain a check on the standards of necropsy studies in all hospitals.

4. Augment the teaching of forensic medicine in medical and law schools.

5. Encourage research and publication in forensic medicine.

It should be emphasized finally that positions must be full time, salaries high, and graded increases in salary and rank established to furnish an incentive for men of high caliber to accept the responsible positions and for young men of equal quality to enter this branch of medicine as a career. Even so, the ultimate cost to the state and counties should show little if any increase, more probably a decrease.

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ABSTRACT OF DISCUSSION

JOHN C. SIMPSON (Norristown): Dr. Custer is to be congratulated for the work and effort that he has put in this matter. I know that it has been a pet of his for a good many years; he has worked hard on it, and I agree with everything he says.

I have had some experience under the coroner system. I have been coroner's physician of Montgomery County since 1928. We have done some good work with what we have. We have solved practically all of our murders, have been quick about it, and have gotten convictions, and even in our most recent case, the woman who was found in a deserted house in Horsham township, we had identification and a confession in 5 days. That is not bad.

But we have had a lot of trouble in various ways—first, in lack of autopsies. The coroner's office runs on a fee basis, and the budget is low for autopsies, so that the coroner really can order autopsies only in those cases in which there is a suspicion of criminal death. That means that no autopsies are done on victims of industrial accidents, automobile accidents, or in cases of sudden death, that is, none are ordered by the coroner because he is not able to do it.

Then, of course, we suffer from a lack of equipment. We have no morgue. The undertakers and the hospitals now have excellent equipment, but I have performed autopsies in places that have not been particularly ideal. I have done them in kitchens, bedrooms, garages and barns, outhouses, on the side of open graves, and even out on open roads.

Under the medical examiner system, I am sure that we would have a morgue. We have no laboratory facilities, and we have no one trained in medicolegal medicine, so that all the material has to be sent away—to the F. B. I., the State Police laboratories, or the Philadelphia laboratories—for the examination of bullets, dust, particles from clothing, and the identification of hairs. This all should be done in our district. There is a tremendous loss to medical science and to the legal profession due to the lack of autopsies. Think of their value in industrial accidents and industrial diseases.

If the medical examiner system is adopted, we must have medical examiners who are well trained in forensic medicine, and their offices must not be political. Dr. Custer emphasized that. The medical examiner must be a man who is well trained in that line; his position must be permanent and full time, and he must be well paid. I think Dr. Custer's suggestion that the training start in the medical school is a proper one. We should have better forensic medicine in the undergraduate medical schools, and after a man has served an internship, if he has ambitions along those lines, the medical schools should offer a postgraduate course. Then the graduate should take a position in a well-organized medical examiner's office. After serving his proper time there, he should pass an examination equivalent to that of the American Board of Pathology or the board that Dr. Custer recommends, and then he should be available for the small communities.

A system like that would be a decided improvement over the coroner system, and I am sure that this section will keep after it until they get it.

Warren J. Peters (Allentown): I happen to be an M.D., a practitioner, and a coroner. I have had occasion to order numerous autopsies and there has never been any question as to the cost. I am on a salary, not a fee basis. When I consider an autopsy is necessary, I order it without any question.

Dr. Custer (in closing): If one should lump the cost of the coroner's office in each county where the separate organization is maintained, it would be found that it amounts to a great deal in the aggregate. A well-functioning medical examiner's office should be able to cover in its scope a group of counties. That is one of the thoughts that I have as far as total cost to the state goes.

The fact is that Schultz and Morgan actually analyzed the figures of an equivalent coroner system and medical examiners' system and found that the latter cost less, but it operated more efficiently and over a wider scope and performed a great many more autopsies than the coroner's office that was under consideration. They went to great pains to equalize the best they could the districts of the two systems under comparison.

EXPLOSIONS

Occasional and unusual occurrences are the events that always attract. Especially is this the case in facts reported in newspapers. Commonplace, everyday routine does not make the headlines; therefore, readers receive the impression that the occasional is the rule.

This has been particularly true of explosions of anesthetic agents. When we consider the thousands of anesthetics administered every day, actual incidence of anesthetic accident due to ignition is very, very small. Even in the compilation of explosions of anesthetic gases by one of our anesthesia societies, and one of our clinics, the total number is small, although the report covers several years. This is not mentioned in any way disparagingly of the importance of an explosion even though only a few deaths were reported, but rather this is a plea for sanity and level-headedness in attacking the problem. Banishing of one explosive agent by some clinics, while retaining others equally liable to produce an explosion, is not evidence of a sane, scientific approach.

Anesthetic explosions will probably continue to occur because, in spite of all appliances and precautions, the human element must always be taken into consideration.

Failure of the human element is due either to carelessness or to ignorance. Carelessness can be overcome by taking thought and deliberately eliminating factors which set the stage for explosion. Use of proven nonexplosive combinations of anesthetic agents and the employment of appliances which are recommended through reliable scientific sources, these two precautions are strongly approved. Ignorance can be eliminated through knowledge of the physics of static charges and explosive anesthetic agents.

Recommended use of explosive anesthetic agents in such places as x-ray and fluoroscopic rooms is evidence of ignorance of the physics of explosive anesthetic gases and ignition charges. A nonexplodable anesthetic agent should be administered under such circumstances. Such agents are available to properly trained anesthetists. Use of an igniting agent in the stream of an explosive anesthetic, as has been reported, is clearly the result of ignorance.

There is a great deal of competent research being done in connection with the problem of explosives. Those so engaged include members of this society as well as members of a very high-class scientific institution whose staff of investigators is recognized as a group of leaders in their particular fields. Until the results of this research are published, let us take every precaution to prevent explosions; let us avoid rash and ill-considered decisions; and, by all means, let us refrain from banishing from our armamentarium valuable anesthetic agents.—*Anesthesia and Analgesia.*

RETURN YOUR INFORMATION CARD FOR THE DIRECTORY PROMPTLY

About Sept. 1, an information card was sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. The information secured is to be used in compiling the Seventeenth Edition of the *American Medical Directory.*

The directory is prepared at regular intervals in the Biographical Department of the American Medical Association. The last previous edition appeared in 1940. This volume is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States; it has been especially valuable in the medical preparedness program. In it, as in no other published directory, are dependable data concerning physicians, hospitals, medical organizations, and activities. The directory provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, tabulations of medical journals and medical libraries and, indeed, practically every important fact concerning the medical profession in which anyone might possibly be interested.

Before filling out the information card, read the instructions carefully. Physicians are especially urged to state whether or not they are on extended active duty for the Medical Reserve Corps of the United States Army and Navy. Fill out the card and return it promptly whether or not a change has occurred in any points on which information is requested. If a change of address occurs before Mar. 1, 1942, report it at once. Should you fail to receive a card before the first of October, write at once to the headquarters office stating that fact and a duplicate card will be mailed.

Leiomyoma Uteri with Associated Pelvic Inflammatory Disease

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THIS case study was inaugurated with one main objective to determine if possible what factors are most valuable in the preoperative recognition of pelvic inflammatory disease in conjunction with myoma uteri. It was inspired mainly because of the increased technical difficulty encountered during surgical treatment of such an association of pathologic pelvic lesions, particularly when the myomas are large, and in contrast to hysterectomy or myomectomy performed without the added factor of adnexal inflammatory lesions.

It is generally recognized that small myomas do not prevent the successful employment of the tactile sense in diagnosis, but myomas 8 to 10 cm. or larger, especially when multiple or intraligamentous, so completely disturb anatomic relationships that ordinary bimanual examinations do not suffice to tell accurately the condition of the adnexa. Obesity and poor co-operation are frequently met. Examination under anesthesia is unsatisfactory in estimating the important factor of adnexal tenderness. Thus in many instances the diagnostic burden is placed on clinical evidence. Personal experience with infection in the adnexa plus large myoma uteri has led us to feel that many advantages would accrue were the diagnosis definitely or reasonably sure before operation. Reeb of the Strasbourg Clinic states: "The diagnosis of pyosalpinx is difficult to make in the presence of myomas, especially when they are large." Precisely because this last statement is true, we believe that increased effort to determine this association preoperatively will largely lessen postoperative morbidity and the danger of accidents at laparotomy.

It is not our intention to raise controversial issues such as the vaginal versus the abdominal route in surgical intervention, nor to discuss etiology, prognosis, or treatment. We feel that an accurate evaluation of adnexal inflammatory disease should make the surgeon weigh the preoperative preparation with greater care than when a myoma occurs in an uncomplicated state. To emphasize this, we find many glowing reports praising the efficacy of the vaginal route, even to removing large fibroid tumors by morcellation. This places a premium on the diagnostic ability of individual gynecologists. It seems obvious that injuries to the bowel, bladder, and ureters would be much more common were this route used in preference to the abdominal, especially in the presence of many and fibrous adhesions, which are most often encountered in and produced by inflammatory pathology. It is further possible to guard against injury to one or both ureters by preoperative insertion of ureteral catheters. Identification of these important structures is thus rendered fairly simple in a maze of badly disturbed anatomic relationships. Many such may be encountered at operation when bad infections complicate myoma uteri, particularly the large ones. With these things in mind the surgeon should be aided in avoiding injury to vital structures by increasing his consciousness of the possibility.

We obtained the following material from gynecologic records of the Elizabeth Steel Magee Hospital of Pittsburgh. The study covered a period from Jan. 1, 1938, to Jan. 1, 1940, during which period there were 463 hysterectomies and 37 myomectomies of all types performed. We excluded all cases having a myoma under 2 cm. in diameter unless small fibroids were multiple to the point of marked gross enlargement of the uterus. No case was considered as having an associated pelvic inflammatory lesion unless a gross diagnosis was made on inspection confirmed by a pathologic diagnosis from stained sections; thus all cases had a laparotomy or vaginal hysterectomy. Cases treated only by radium or roentgen rays were excluded. Of the 500 cases studied, 225 or 45 per cent had a myoma 2 cm. or larger, and 75 or 33.3 per cent

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Read before the Section on Obstetrics and Gynecology of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

From the Elizabeth Steel Magee Hospital, Pittsburgh, Pa.

Table I

Types of Inflammatory Lesions

Type	*No.*	*Per Cent Infected*	*Per Cent of Total*
Tuberculous salpingitis ..	2	2.66	.88
Chronic salpingitis without suppuration	65	88.1	28.8
Chronic suppurative salpingitis	6	8.0	2.65
Acute salpingitis	2	2.66	.88
Ovarian abscess	3	4.0	1.33
Chronic metritis	52	69.2	23.1

of these presented a definite inflammatory process in the salpinges or ovaries or both.

It is interesting to note that while statistical and clinical studies on myoma uteri are commonplace in past and present-day literature, no direct reference with which the following material could be compared was obtainable. No author was found who limited the pelvic lesions to myomas 2 cm. or larger or the pelvic complications of myomas to those of an inflammatory nature.

The group comprised 168 white and 57 colored women. Of the 75 infected cases, 40 were colored and 35 white. Thus 40 out of 57 or 70 per cent of the negresses were infected, as contrasted to 35 out of 168 or 20.83 per cent of the white women. This should prompt us to look closely for adnexal infection in colored women and conclusively shows the need for better venereal prophylaxis in the colored race.

Attempts to elicit information regarding previous venereal infection were considered valueless except in a very few instances. This was attributed to reluctance to divulge essential information, or ignorance, on the part of the patient. The large majority of these women were clinic patients and the I. Q. of this group is fairly low. Only 3 of the infected group definitely stated that they had been previously diagnosed and treated for gonorrhea. On the other hand, 46 per cent admitted to one or more abortions, either self-induced or spontaneous. Some gave a vague history of a febrile postabortive state, but most denied this type of reaction.

Table II

Appearance of Symptoms in Age Groups

Age	*Noninfected Group*		*Infected Group*	
	No.	*Per Cent*	*No.*	*Per Cent*
20-30	8	5.33	6	8.0
31-40	47	31.3	35	46.6
41-50	81	54.1	31	41.3
51-60	11	7.33	3	4.0
61-	3	2.0	0	0.0
Total	150	100%	75	100%

Since no logical conclusion concerning etiology could be reached from analysis of these histories, we reject it as an important factor in preoperative recognition of adnexal inflammatory lesions.

Relative appearance of symptomatology in age groups brings to light several interesting observations. We note that in the noninfected group the majority did not come to operation until between 41 and 50 years of age. In the infected series the largest group needed major surgery between the ages of 31 and 40.

Vaginal bleeding in excess of the normal cyclic occurrence is one of the major objective symptoms accompanying fibroid uteri. This was subdivided into normal, excessive, markedly excessive, and continuous. There was little variation in the two groups and consequently this feature of myomas, in this series at least, presented a negative picture in helping to evaluate the condition of the adnexa. It has been suggested by some writers that bleeding from fibroid uteri is more profuse when infection of the endometrium, myometrium, or adnexa is present. We could not corroborate this.

Table III

Vaginal Bleeding

Type	*Noninfected Group*		*Infected Group*	
	No.	*Per Cent*	*No.*	*Per Cent*
No change from menstrual cycle ..	69	46	26	34.6
Excessive	50	33.3	35	46.6
Markedly excessive .	30	20	10	13.3
Continuous	1	.66	4	5.3
Total	150	100%	75	100%

The severer forms of secondary anemia were slightly more prevalent in the infected group, suggesting that a complicating infection in the pelvis may augment the degree of anemia occurring as a consequence of menorrhagia or metrorrhagia. For purposes of classification, no case was considered anemic showing a hemoglobin determination of 80 per cent or better and a red blood cell count of 4.0 or better. All others were placed in 4 zones as seen in Table IV. All determinations were made by trained laboratory assistants; the Hayden-Hauser method of reading hemoglobin levels is standard in our hospital. Sixty per cent of the infected group, as against 40 per cent of the noninfected cases, were included in the last 3 zones with the hemoglobin below 70 per cent and the red blood cell count below 3.5—levels which we considered definitely anemic. Only 40 per cent of the infected group as contrasted to 55 per cent of the

TABLE IV

SECONDARY ANEMIA

	Noninfected Group		*Infected Group*	
Zone	*No.*	*Per Cent*	*No.*	*Per Cent*
No Anemia	22	14.6	6	8.0
Zone 1: Hb. 70-80% R. B. C. 3.5-4.0	61	40.6	24	32.0
Zone 2: Hb. 60-70% R. B. C. 3.0-3.5	40	26.6	29	38.6
Zone 3: Hb. 50-60% R. B. C. below 3.0	11	7.3	10	13.3
Zone 4: Hb. below 50% R. B. C. below 3.0	14	9.3	6	8.0
Not done	2	1.3	0	0
Total	150	100%	75	100%

noninfected cases showed the blood picture to be relatively normal.

Temperature elevation and leukocytosis as diagnostic aids to inflammation were so disappointing that no tables were prepared. This conclusion is supported by many counts. We have shown that approximately 70 per cent of the infected group had chronic metritis as a separate focus of infection. Atmospheric conditions in the Pittsburgh district are particularly productive of chronic foci of infection in the upper respiratory tract. Many cases had diseased tonsils, pyelo-ureteritis, etc. Many of the fibroids showed varying degrees of degeneration or necrosis. Enough of these foci were present to render an analysis of temperature elevation and leukocytosis valueless unless performed on a carefully selected group of cases, free from other demonstrable reasons for leukocyte increase. We do not deny that the leukocyte count is of value in other communities and types of practice. Seventy-eight per cent of our cases were clinic patients, a potent reason why we found so many chronic foci of infection other than pelvic.

Reduction in the sedimentation rate of blood is tabulated. The method used to compute the rate was that most commonly employed, using citrated blood in an 18 mm. tube designed for this purpose. We see the main discrepancy in those with a rate below 60 minutes—35 per cent of the infected and 23 per cent of the noninfected. Also a sizable difference is noted in the group below 30 minutes—14.5 per cent as compared to 4 per cent. Since the infected group showed practically 4 times as great a percentage below 30 minutes, perhaps stress should be laid on this point. The percentage is too low to be conclusive, however, and we feel that the same chronic foci of infection affecting the leukocyte count will help reduce the sedimentation rate of the blood. The approximate percentages obtained in both groups clearly demonstrate the unreliability of this test as an index of adnexal pathology per se.

TABLE V

SEDIMENTATION RATE

	Noninfected Group		*Infected Group*	
Time in Minutes	*No.*	*Per Cent*	*No.*	*Per Cent*
90 or above	80	53.3	32	42.6
60 to 89	25	16.6	17	22.6
30 to 59	29	19.3	15	20.0
29 or below	6	4.0	11	14.5
Not done	10	6.6	0	0
Total	150	100%	75	100%

The most striking picture was that of pelvic pain. This syndrome was critically analyzed. Those women complaining of a heavy feeling in the pelvis or simple pressure sensations were not considered as having a pain syndrome. Those with actual pelvic pain listed it as one of their main complaints and in all cases it was lower abdominal or pelvic in location. In Table VI we note that 80 per cent of the infected cases gave this as one of their main symptoms, while only 40 per cent of the noninfected group could be thus classified. This fact is further amplified when we consider that 60 per cent of the noninfected women as compared to 20 per cent of the infected carried their myomatous uterus comfortably, the diagnosis usually being made when examined routinely or as a result of changes occurring in the menstrual cycle. Pelvic pain is seemingly most indicative of pelvic inflammatory disease, and this should be brought out as the most salient point in our case review. Such evidence makes us feel that it should be most carefully considered.

TABLE VI

PELVIC PAIN

	Noninfected Group		*Infected Group*	
	No.	*Per Cent*	*No.*	*Per Cent*
Definite pelvic pain syndrome	61	40.6	60	80
No pain	89	59.4	15	20
Total	150	100%	75	100%

Some further observations were made, not pertinent to diagnosis, but of general interest. The average convalescent period, counting the day of discharge, but not the day of operation, was 18 days for the noninfected group and 18.18 for the infected group. No day was con-

Table VII

Postoperative Complications

	Noninfected Group		*Infected Group*	
	No.	*Per Cent*	*No.*	*Per Cent*
Cystitis	5	3.33	4	5.33
Pyelitis	2	1.33	3	4.0
Wound abscess	6	4.0	3	4.0
Pulmonary embolism	1	.66	0	....
Pulmonary atelectasis	1	.66	0	....
Bronchopneumonia .	3	2.0	0	....
Pelvic thrombophlebitis	2	1.33	0	....
Phlebitis—lower extremities	1	.66	2	2.66
Acute blepharitis ...	1	.66	0	....
Total	22	14.66	12	16.0

sidered febrile unless the temperature reached 100 F. once in a 24-hour period, not counting the day of operation. The average number of febrile days was 5.39 for the noninfected and 6.86 for the infected groups.

There were 4 deaths or 1.77 per cent in the entire series. Two occurred in each group, or 1.33 per cent of the noninfected and 2.66 per cent of the infected cases. One of the noninfected women died of generalized peritonitis, the other of extensive necrosis of the bowel with development of numerous fecal fistulas. Of the 2 deaths in the infected group, one was from postoperative shock, and the second from a cerebral embolus.

There were 22 postoperative complications of all types in the 150 clean cases and 12 in the 75 infected cases. These are listed in Table VII in order to show the types most commonly encountered as a result of extensive pelvic surgery. Drainage was resorted to a little over twice as often in the infected group. Blood Wassermann tests were positive in 3.1 per cent of the noninfected and 21.4 per cent of the infected cases.

Summary

A total of 463 hysterectomies and 37 myomectomies were performed in a 2-year period at Elizabeth Steel Magee Hospital in Pittsburgh. These were studied with the aim of establishing the most constant subjective or objective factors as an aid in the preoperative recognition of adnexal inflammatory disease complicating myoma uteri. The scant treatment of the subject in the literature suggested the need of a case study. Arbitrary standards were set up; namely, the myoma must be at least 2 cm. in diameter or multiple to the point of gross enlargement of the uterus, and the coincident infection must have been described at laparotomy and further corroborated by pathologic diagnosis of stained microscopic sections. There were 225 cases satisfying these criteria, of which 75 showed associated inflammatory disease in the ovaries, salpinges, or both. While some conclusions may be reached from the factors studied and the tables presented, the results as a whole were disappointing.

Conclusions

Our tables show clearly that the clinical factors of sedimentation rate, vaginal bleeding, and secondary anemia cannot be depended upon to assist greatly in assuring us that the element of pelvic infection is present when myoma uteri are large enough to be easily palpable. Because of the large number of cases showing one or more extrapelvic foci of infection, temperature elevation and leukocytosis were distinctly misleading in this series.

Pelvic pain was the most constant factor in the infected group and its presence should always suggest infection; 80 per cent of this group listed it as a major complaint. A careful analysis of this factor in the history seems of more diagnostic aid than can be had from the laboratory.

ABSTRACT OF DISCUSSION

Everett M. Baker (Pittsburgh): In this paper by Drs. Mering and Chalfant 500 cases are reviewed and a critical survey of 225 of them is made. They have been very definite and explicit in their definition of eligibility of these 225 case records, which to me means a great deal, because I have found in reviewing the literature that authors such as Schmitz, Gutman, Keene, Kimbrough, Cholier, Baer-Reis, Lynch, and Gardner do not specifically limit the size of the fibroid nor do they specifically limit the adnexal pathology to infection of the fallopian tubes or ovaries or both. Hence it might be assumed that endometriosis, tubal pregnancy, ovarian cysts, ovarian malignancies, etc., were included as pelvic pathology complicating fibroids in the reports given by other authors.

Is it not interesting to learn from the essayists' report that, out of 225 patients, 75 or 33.3 per cent showed a definite inflammatory process in the fallopian tubes or ovaries, or both? The percentages of the different types of salpingitis represent what one would expect from the average clinic. After due consideration, the grouping of infected and noninfected patients according to age is about what one would surmise.

It is generally conceded that a combination of salpingitis and fibroids react on each other in a way which may be deleterious to the patient. In most cases of pelvic inflammatory disease, adhesions are inevitable. A myomatous mass previously causing no symptoms may become very annoying as a result of tugging on these fibrous bands. In our experience, fibroids seem to prolong the convalescence from an acute infection of the tubes.

Noteworthy is the occurrence of vaginal bleeding and of pain in this series of cases. In the infected group 46.6 per cent had excessive bleeding, while in the noninfected group 33.3 per cent had excessive flow. All tables and statistics present facts difficult of explanation. They report markedly excessive bleeding in 13.3 per cent of the infected and 20 per cent of the noninfected group. A very striking fact is the occurrence of pelvic pain in 80 per cent of the infected group and in 40.6 per cent of the noninfected group. Pain in these cases is often independent of the menstrual flow. It may be due to the pressure of the myomatous uterus upon the adjacent pelvic viscera, or to accompanying adnexal inflammation, or to adherent bowel or omentum.

The report of the blood counts, sedimentation rates, and Wassermann tests apparently represents a critical analysis of these laboratory studies and shows them to be of little value as an aid in diagnosis.

The importance of an accurate diagnosis of complicated or uncomplicated fibromyomas has been clearly brought out by Drs. Mering and Chalfant. The temperature chart, the blood count, sedimentation rate, physical findings, and history form the basic facts for determination of diagnosis. There is no history which is pathognomonic of myomas and which would not suggest several other diagnoses, nor are there any laboratory studies which make the diagnosis certain. The court of last appeal, from which the ultimate clinical decision must be handed down, rests in the examiner's sense of touch.

Recently, in cases of doubtful diagnosis, we have resorted to the use of the peritoneoscope and have found it to be of value. Although the findings through the employment of this instrument are not always clear-cut and positively assuring, it is felt that the assistance received more than justifies the slight trauma and hazard to the patient. A small incision 1 to 2 cm. in length through the skin, fat, and sheath of the rectus muscle is made in the mid-portion of the abdomen and the trochar and cannula are introduced into the peritoneal cavity, with much the same technic as in an abdominal paracentesis. Filtered air is used to distend the abdominal wall. In this way, with the lighted cystoscope-like instrument, any portion of the abdominal and pelvic cavity can be visualized.

As a further aid in diagnosis of the difficult case, we might suggest the use of carbon dioxide and manometric readings, as outlined by Dr. I. C. Rubin. The injection of a radiopaque medium, such as lipiodol, hippuran, or skiodan, into the uterine cavity in cases where there is doubt as to the presence of a complicating salpingitis is also a diagnostic procedure of merit in certain cases.

Every myoma patient should be individualized. The patient should not be made to fit the treatment, but rather the treatment should be made to fit the patient. Complications are encountered more often in cases with associated pelvic infection. Bladder and kidney infections do not occur as often as one would think. The table listing complications is most striking in reference to pelvic thrombophlebitis and phlebitis of the lower extremities. In the infected group of cases pelvic thrombophlebitis does not occur, while there were 2 cases (or 2.66 per cent) of phlebitis of the lower extremities. In the noninfected group there were 2 cases (1.33 per cent) of pelvic thrombophlebitis and one case (0.66 per cent) of phlebitis involving the lower extremities. These results seem somewhat paradoxical.

In closing, I believe that we all concur wholeheartedly with Drs. Mering and Chalfant in the contention that few gynecologic problems require more diligent study and careful thought than does the proper management of uterine myomas.

Dr. Mering (in closing): I should like to make a few remarks about the peritoneoscope. My experience with it has been very limited. I have looked into about 5 or 6 pelves and have to admit that I did not see much. The bowel got in my way, but I do not think that the technic used by the man who was just starting to do this was very good. He has since improved his technic and I understand that he can see a great deal more at present.

This, of course, does not help in the diagnosis of pelvic inflammatory disease with large leiomyoma uteri. A peritoneoscope could not get into a pelvis filled by one of these. You could not see around it, I am certain. It would help, however, in the moderately large myomas, and it certainly would in the small ones, providing there were not too many bowel adhesions.

Safety measures taken by America's big defense industries have improved virtually 100 per cent since the last war, the United States Public Health Service said July 25 in announcing results of investigations by state industrial hygienists of more than 600 plants during March, April, and May.

Most of these plants, which employ a total of 250,000 workers, were in the aircraft, military vehicle, ship, explosive, and other defense industries. Five hundred plants actually were surveyed, and in 163, detailed medical and engineering studies were made.

Today's plants are far better equipped to protect workers against industrial hazards, and the workers themselves are more health-conscious, it was found. Further, industrial hygiene programs, virtually nonexistent in 1917-18, have been established and greatly expanded in most states. Protection against industrial diseases, however, is not yet adequate.

State industrial hygienists were assisted by Public Health Service scientists in their surveys, and specific recommendations for improvement of industrial health are being made to employers.

Personnel, trained by the Division of Industrial Hygiene, are being assigned by the Public Health Service to states upon request of the state health commissioners. Federal industrial hygienists have already been assigned to Connecticut, Massachusetts, Tennessee, Missouri, Michigan, Alabama, New Jersey, and Maryland.

The U. S. Public Health Service, at the request of the surgeon general of the army, is also conducting a thorough study of industrial health hazards in all ordnance establishments, quartermaster corps depots, and air fields. Since May 5, 1941, 4 mobile industrial hygiene units have completed investigations of 16 military establishments.

Government-owned but privately operated munitions plants will probably also be studied by the Public Health Service industrial hygienists, upon completion of studies in government-operated plants.

In addition to its field operations, the Public Health Service's Division of Industrial Hygiene is conducting extensive research on industrial poisons at the National Institute of Health, Bethesda, Md.—*Federal Security Agency, United States Public Health Service,* Washington, D. C.

LITHOPEDION

Report of a Case With Review of the Literature

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LITHOPEDION (a calcified fetus) formation is rare, occurring in an estimated 1.5 to 1.8 per cent of extra-uterine pregnancies (Schumann from William P. Smith and others).

This case is interesting because of its apparently short period of parasitic existence in the abdomen and the definite finding of the placenta.

Masson and Simon in 1928 collected 183 cases from the literature. Bland and others collected 14 cases, bringing the total to 197 cases. Mathieu in 1939 collected 31 cases from the literature and added one, bringing the number of reported cases to 229. Subsequently 5 more cases have been published. These, with the one herein described, bring the grand total to approximately 235 cases.

The 5 cases reported in the literature are:

1. Abdominal pregnancy with retention of a fetus 22 years; ablation during laparotomy for ovarian tumor. A case.
2. Note with report of a case.
3. Case in a native.
4. Lithokelyphopedion. Case.
5. Lithopedion, 47 years old, causing mesenteric hemorrhage. Case.

Case Report

Mrs. C. C., a negress, aged 23 years, entered Pittsburgh Hospital Dec. 2, 1938, complaining of pain in the pit of the stomach and vaginal bleeding. Her menstruation started at the age of 11 years and was regular every 30 days, 4 days without clots, pain, or vaginal discharge, until after the first of her 2 children was born in 1933. This was a spontaneous delivery of a normal child with a normal puerperium. After this delivery her menstrual periods increased to 7 days, occurring every 30 days, each period being preceded by a profuse yellow discharge for over a week and succeeded by 2 days of a yellowish-white discharge. A second child was delivered spontaneously in 1937 with an apparently normal puerperium. The menstrual periods were as before this delivery. There were no known miscarriages. Her last normal period was May 22, 1938.

On July 18, 1938, at 12 o'clock noon, she had a severe cramp-like pain in the lower part of the abdomen lasting about one-half hour. This was followed in 2 hours by vaginal bleeding consisting of dark red blood without clots. The pain was cramp-like in nature, constant in location, and severe enough to confine the patient to bed. A physician was not called. The bleeding continued for about 12 hours, during which time she remained in bed. The next morning she was able to do her ordinary housework without discomfort, bleeding, or discharge. She continued until Aug. 4, 1938, which was 17 days from her first attack of pain. At this time she had similar cramp-like pain, more severe in nature and lasting in its severity 24 hours, subsiding gradually in one week. The attack of pain was followed in one hour by moderate bleeding from the vagina intermixed with clots. A placenta or fetus, as such, were not observed by the patient. She had the usual difficulty in voiding for about 4 days. The patient was confined to bed, bleeding continuously, for 14 days when the bleeding stopped. There was slight low, mid-abdominal discomfort. Then she noticed a knot in the lower part of her abdomen about 12 cm. in diameter which was partially mobile. It remained in the midline when she was supine. The patient resumed her normal housework as soon as she was permitted out of bed.

On Sept. 20, 1938, 32 days after the cessation of bleeding, she had a normal period. On Oct. 20, 1938, she had another supposed period with no pain. On Nov. 22, 1938, she had some vaginal bleeding at the time of her regular period with moderate cramp-like pain. It continued for 12 days until Dec. 4, 1938, when she came to the hospital. There were clots at this time and much more profuse bleeding than had been previously experienced. The history was otherwise negative except that she had been treated for syphilis.

Examination.—We shall omit the general physical examination and confine ourselves to one particular field—the abdomen.

There was a firm irregular mass about 10 cm. in diameter in the lower part of the abdomen. This mass was very slightly mobile and not at all tender. There was a hard mass to the right of the larger mass and located about 2 cm. below McBurney's point. This could be moved in the abdominal cavity and apparently was attached to the larger mass.

The patient was operated upon under gas-ether anesthesia with routine preoperative preparation on Dec. 7, 1938. She was placed in a marked Trendelenburg position. The ordinary mid-line incision was made. The mass in the adnexa was delivered. The left infundibulo-

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pelvic and broad ligaments were clamped and divided, and the mass excised. The cornual portion of the tube was removed as usual. The appendix was amputated.

Pathologic Description.—When the peritoneum was opened, the omentum was seen to be adherent to the left tube-ovarian mass. The mass was heart-shaped and measured about 11 cm. in length by about 8 cm. across the base. The apex of the mass was inferior. It was adherent to the parietal peritoneum, the posterior leaflet of the left broad ligament, and the numerous coils of small intestine. In the cul-de-sac it was adherent to the rectosigmoid and the posterior surface of the uterus. This resulted in a quarter turn of the uterus, displacing it to the right. The appendix measured about 9 cm. in length by 0.9 cm. in diameter. The tip of the appendix was attached to a lithopedion. The lithopedion had no other attachments.

Pathologist's Report.—The specimen consisted of a lithopedion which was attached to the tip of the appendix and a mass which was composed of the left tube, left ovary, and a heart-shaped structure of doughy consistency. The lithopedion measured 6.5 cm. in length by 2.5 cm. in diameter. This fetus was extensively, although not completely, calcified. The base of the skull, ribs, arm and leg bones, the carpal and tarsal bones, and the pelvis could be identified. The mass measured 9.5 cm. vertically by 10 cm. laterally by 6.5 cm. in thickness. The ovary, although firmly adherent to the mass, was external to the capsule. There was nothing unusual noted about the structure of the ovary.

The fallopian tube was bound by adhesions to the capsule of the heart-shaped mass. About 4 cm. of the tube could be recognized as a semi-round structure. The tube curved a distance of 4 cm., then inward a distance of 6.5 cm. to enter the mass. The tube was thus in the form of a hairpin. The tube at its point of incorporation in the mass presented a dilated lumen which measured 1 to 1.5 cm. At the entrance into the mass the elongated striated remains of the fimbriated end of the tube were found. The remnants of the fimbriated end of the tube were continuous with the substance of the mass.

The substance of the mass was composed of organizing blood clot and a spongy reticulated, meaty tissue that had the characteristics of placental tissue and covered by a thin bluish membrane under which thin-walled vessels were seen, identifying it as amnion.

Microscopic sections of the grayish-red tissue from the mass showed blood clot and ghosts of placental villi. Some sections showed poorly preserved decidual cells. From the appearance it would seem that the tissues were not viable at this time.

The patient had an uneventful afebrile recovery and was discharged from the hospital 14 days postoperatively. She was seen in 2 weeks and 2 months following discharge and was well. On Sept. 20, 1939, the patient was examined and found to be 2½ months pregnant. She stated that one month later she had a miscarriage and was not seen by a physician at that time.

P. Brooke Bland and others in their excellent paper stated that, when mummification of the uterine fetus occurs, no trace of placenta or placental tissue can be found. In this case the remnants of the placenta were found. The rupture of the left tubal pregnancy apparently occurred about 14 weeks after conception, estimated from the development of the fetus. The fetus apparently remained in the abdominal cavity about 4 months. This, according to Smith and Bolton, is a short time. They state that in order for a lithopedion to result it is necessary that there be retention of a fetus within the abdomen, that this fetus develop to at least 3 months, that there be absence of infection, and that the mother survive for a period of years.

The history apparently points clearly to the date of occurrence of rupture of the tubal pregnancy which resulted in lithopedion formation in this case. The second period of bleeding occurring after 2 apparently normal periods is difficult to explain unless conception with miscarriage occurred. Although the history did not demonstrate a missed period, numerous clots and cramp-like pain with profuse and continuous bleeding were present.

Summary

A case of lithopedion formation was presented. The interesting features were:

1. Early calcification, 4½ to 5 months.
2. The finding of the placenta.
3. The attachment of the lithopedion to the tip of the appendix.

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ABSTRACT OF DISCUSSION

David B. Ludwig (Pittsburgh): The essayists present an unusual condition, as there have been only 235 cases, or thereabouts, cited during the past 400 years.

There is another complication of extra-uterine pregnancy that is also quite rare, namely, simultaneous or combined extra-uterine and intra-uterine pregnancy in which the ectopic and the intra-uterine pregnancies occur at the same time. These cases have been reviewed over a period of 400 years and there have been found to be, I think, some 336 cases to the present time. Some in this group have been extremely unusual.

There is another type of case, even more rare than either the compound or combined type, reported by Mathieu, in his review in 1938, in which there is a combination of the 2 types, i.e., a lithopedion followed a combined pregnancy. There have been only 2 such cases reported, the other by Hayward in 1934.

Masson of Mayo's in 1928 reported 9 cases over a period of 24 years, in which time they have had 446 ectopic pregnancies. That, of course, is a very high proportion, but the Mayo's have a high percentage of the unusual cases. Some authors have published reports of as many as a thousand ectopic pregnancies without having reported a case of this type.

There was an extremely unusual case reported in the *Lancet* in 1936 by Dr. Lye of Singapore. The patient, a Chinese woman, was delivered of a normal child at the age of 30. At the age of 40 she became pregnant again and went along for 9 months, until near term, when severe abdominal pain developed. The abdomen was massaged and at the end of a day fetal movements ceased. Pain continued for a month. She did not menstruate for one year and at the age of 41, the menstrual periods were resumed and continued to the age of 70, which to us would seem indeed a rarity. The lithopedion was found at the age of 100, discovered by x-ray examination.

EXAMINATIONS FOR MEDICAL POSITIONS ANNOUNCED BY CIVIL SERVICE COMMISSION

Examinations for 3 types of medical positions in the government service have been announced by the Civil Service Commission. This is another indication of the great demand for technically trained personnel of every kind in the defense program. Each of these positions has been open to competition within the past year, but the demand grows even faster than the supply.

Junior medical officer positions at $2000 a year will be filled at St. Elizabeths Hospital in Washington, D. C. There are 2 types of internship—rotating and psychiatric resident. The rotating internship consists of 4 months of surgery, acute medical service, and of chronic medical service; 2 months of obstetrics and of pediatrics, on affiliation; 3 months of general laboratory work; and 6 months of psychiatry. To qualify, applicants must be fourth-year students in a class-A medical school. Applicants must show completion of the course prior to June 30, 1942, before they may enter on duty. Graduates in medicine who have already served an accredited rotating internship are offered a postgraduate internship of one year of psychiatry (American Medical Association Classification 2, Type B). To qualify for this type of appointment, applicants must have completed their fourth year of study in a class-A medical school subsequent to December, 1935, and must have either a B.M., or M.D., degree. Applications will be accepted at the commission's Washington office until Nov. 15, 1941, and will be rated as soon as practicable after receipt.

Medical technical assistant positions at $2000 a year and medical guard-attendant positions at $1620 a year will be filled in the Mental Hygiene Division of the U. S. Public Health Service. Applicants must be registered graduate nurses, or have been honorably discharged (within the 10 years immediately preceding date of receipt of application) from active service in the Medical Corps of the Army or Navy, or have had 3 years' service as guard-attendant in a federal penal or correctional institution. In addition, for the technical assistant, applicants must show that their experience has included one year of responsible training or experience in clinical laboratory technic, pharmacy, or x-ray laboratory technic. Applications will be accepted *until further notice.* Persons who were rated eligible for these 2 positions in the examination which closed in February of this year need not apply for this new examination, as eligibles from both examinations will be combined on the new register.

Further information and application forms may be obtained at any first-class or second-class post office or from the Civil Service Commission in Washington. Qualified persons are urged to file their applications at once.

GERIATRICS

For some years statistics have shown that the average age of the American population has been increasing. High birth rates and heavy immigration formerly kept the average age low in this country. Since the beginning of the century the birth rate has dropped more than a third and immigration has been cut drastically. Longevity also influences the average age. In 1900 the chance of survival to age 65 was slightly more than 40 per cent; at present the chance is 60 per cent.

Considering the age 65 as the threshold of old age, the percentage of persons in the older age group has increased from 4.1 per cent in 1900 to 6.8 per cent at present. Present trends indicate a percentage of 14 by 1980.*

Change in age structure of a country has a profound influence. The effect on medical practice already is apparent and without doubt will become more striking as a greater portion of medical practice necessarily will deal with diseases which particularly affect older people. The special branch of medicine, geriatrics, probably will take its place with other specializations.

Mortality statistics in 1938 showed that half of the infants born eventually would succumb to degenerative disease of the circulatory system and kidneys. The chances of dying from this group of diseases rise steadily through life so that at age 60 the chances exceed 60 per cent.

New therapy methods have caused a marked decrease in mortality from pneumonia, but the greatest success of modern therapy has been in young rather than older persons.

Orthopedic problems will become greater, for not only are older persons more prone to accidents but accidents are more disabling to older persons.

The problem of cancer is of growing importance, and even if death rates at various periods remain at present levels, there will be increasing numbers of cancer patients because of the increasing proportion of older persons in the population.

In younger persons acute illnesses of short duration predominate, while in older persons chronic diseases of long duration are more common. This will affect not only the medical profession but hospitals as well. The number of mental cases will tend to increase with advanced average age of the population and further tax the already overtaxed institutions for the care of mental cases.

All present indications point to an increasingly important place for geriatrics among the special fields of medical practice.—*The Journal of the Missouri State Medical Association.*

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* *Statistical Bulletin,* Metropolitan Life Insurance Co., April, 1941.

Bronchoscopy in the Treatment of Postoperative Pulmonary Atelectasis

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IN SPITE of the fact that true postoperative pulmonary atelectasis presents a distinct clinical entity, which differentiates it from postoperative pneumonia, it is only too often confused as such by the inexperienced observer. That this confusion should exist is rather unfortunate since each requires its own specific type of treatment.

As far back as 1890, William Pasteur[1] observed cases of pulmonary atelectasis as a complication of diphtheria. From this observation he was later able to recognize the occurrence of pulmonary atelectasis following operations and in 1914 reported 14 cases occurring in 2000 abdominal operations. In the same year Elliott and Dingley[2] reported 11 cases following abdominal operations.

It was not until 1921 that Scrimger[3] first described this condition in the American literature. Scott,[4] in a complete review of the literature on this subject in 1925, found 64 reported cases to which he added 4 of his own.

In 1928 Lee and Tucker[5] again reviewed the literature and presented their results in the cases treated bronchoscopically. Since that time many more cases have been reported by different observers with variance of opinion as to the cause and methods of treatment.

Modus Operandi of Postoperative Atelectasis

According to Pasteur, the onset of atelectasis was secondary to paralysis of the diaphragm, and since his early observations were based on cases of diphtheria, this may have seemed a logical explanation in those types of cases. Subsequently, Elliott and Dingley felt that it was due to a combination of paralysis of the diaphragm and the presence of secretion in the larger bronchi.

From his observations of the pulmonary changes produced by foreign bodies that had lodged in either of the main bronchi, Jackson advocated the theory of a segmental obstruction by secretion as the primary cause of atelectasis. Scott favored the theory of vasomotor mechanism—the atelectasis being primary and the bronchial obstruction secondary. Mastics, Spitler, and McNamee[6] felt that several factors were responsible; namely, diaphragmatic fatigue, diaphragmatic inhibition, and bronchial obstruction. They believed that decreased aeration produces diminution in evaporation of bronchial secretion with gradual increase in bulk. They quote their own observation and that of others; namely, that many patients presenting a mild bronchitis prior to operation develop an extraordinary degree of bronchorrhea postoperatively, even after spinal, local, or ether anesthesia, and they furnish evidence for proof of this belief. Trout and Hayter[7] did not feel that anesthetics played any part in this complication.

The original work of Tucker in carrying out the first bronchoscopic aspiration on a patient of Dr. Lee's, with immediate improvement of the patient and subsequent reaeration of the affected side, furnished convincing proof of the mechanical obstruction as an outstanding factor in producing atelectasis. Further cases observed by Hearn and Clerf[8] gave added proof to this theory. Smith and Davidson[9] reported in detail the clinical course and x-ray findings in 7 cases of postoperative atelectasis. Although all of their patients recovered spontaneously, they also expressed their belief that this condition is chiefly due to the absorption of imprisoned air distal to a mucous plug in a major bronchus. In their opinion this theory was supported by the fact that immediately after adequate drainage of secretion was established there was marked improvement in the patient associated with reaeration of the involved lung.

That mechanical obstruction is undoubtedly the most important factor has been shown not only by the miraculous improvement associated with the early bronchoscopic aspiration of these

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patients as soon as the condition is recognized but also by immediate re-expansion of the involved side. How closely the phenomenon associated with postoperative atelectasis parallels findings associated with the sojourn of a vegetable foreign body in the tracheobronchial tree is only too apparent to anyone who has followed the physical signs and roentgen changes in these cases. Although at first there may be actual emphysema of the involved side, as soon as the foreign body begins to swell, the lumen of the bronchus becomes occluded, and since no new air can pass beyond the point of obstruction, immediately there is reabsorption of the trapped air in the lung tissue with onset of atelectasis and shift of mediastinal structures to the affected side. With the removal of the foreign body the air again passes into the lung and there is gradual re-expansion.

In postoperative atelectasis the thick, tenacious secretions which accumulate in the bronchi behave exactly as a foreign body, and since the cough of a debilitated individual is not sufficient to displace the viscid secretion, atelectasis of the involved side occurs. The original work of Tucker and Ravdin[10] in producing experimental postoperative pulmonary atelectasis in dogs clearly demonstrated that atelectasis was immediately precipitated by obstruction of the normal airway by the presence of thick, viscid secretions.

Although the principle of mechanical obstruction serves to explain the working basis underlying atelectasis, it in no way considers the predisposing factors which may contribute to its onset.

From the analysis and information gained in the bronchoscopic treatment of the 30 cases here reported, I have come to the conclusion that the following are strong etiologic factors that should be considered as possible causes:

1. Accidental aspiration of food or secretions during the operation.
2. Recent upper respiratory infection.
3. Any unsuspected pulmonary pathology.
4. Unrecognized bronchiectasis.
5. The indiscriminate use of postoperative sedation.
6. The too frequent improper and often unnecessary use of intratracheal anesthesia (see Table I).

TABLE I

CONTRIBUTORY FACTORS TO ONSET OF ATELECTASIS FROM ANALYSIS OF 30 CASES TREATED BRONCHOSCOPICALLY

Contributory Factor	*No. of Cases Suspected Preoperatively*	*No. of Cases of Postoperative Atelectasis*
Accidental aspiration of food during anesthesia	0	5
Recent upper respiratory infection	4	4
Any unsuspected pulmonary pathology	0	3
Unsuspected bronchiectasis	0	5
Indiscriminate use of postoperative sedation	0	6
Intratracheal anesthesia	0	2
Unexplainable causes ..	0	5
Total	4	30

Under group (1), of course, would fall the type of patients who have to be operated upon because of an emergency and no adequate preparation of the patient is possible. Often the operation follows shortly after the patient has had a full meal and during the anesthesia the regurgitated food is reaspirated into the tracheobronchial tree, and even with a fairly active cough reflex there is the possibility of onset of massive atelectasis. In these cases bronchoscopy is absolutely necessary to remove adequately the secretion and particles of food. In this series I have observed 5 patients who developed massive atelectasis suddenly after aspiration of vomitus. The immediate bronchoscopic aspiration of this type of patient acts as a miracle. Before aspiration these patients were cyanotic, dyspneic, incoherent, and practically moribund. Several hours after aspiration they had returned to a practically normal state again, the cyanosis, dyspnea, and toxic manifestations having entirely disappeared, and the patients were rational and alert.

Under group (2) are the cases which had to have an emergency operative procedure for acute appendicitis, intra-abdominal hemorrhage, etc., despite the fact that they might be suffering from a mild upper respiratory infection. Four such cases developed atelectasis and had to be aspirated bronchoscopically.

In group (3), in view of the number of patients who come to operation without ever having roentgen studies of the chest, it is somewhat surprising that more patients do not develop postoperative complications. To illustrate this point clearly, I might mention the case of a healthy man who had an elective herniorrhaphy, following which he developed postoperative atelectasis of the left side. The man had never had any subjective pulmonary symptoms. However, on bronchoscopic examination the terminal portion of the left main bronchus showed a projecting knob of tissue. A small specimen sent to the laboratory was reported as bronchogenic carcinoma. This report was confirmed by subsequent specimens sent to the laboratory.

In group (4) many patients suffer from bronchiectasis without presenting distressing symptoms of profuse expectoration. This has been confirmed by lipiodol studies carried out on a large number of patients. Equally true is the fact that in many of these quiescent patients the condition will immediately "flare up" when they are subjected to general anesthesia. That 5 patients who developed atelectasis had a varying degree of bronchiectasis was shown by subsequent pneumonography.

In group (5) the indiscriminate use of postoperative sedation may be a potent factor in the development of atelectasis primarily by inhibiting the normal cough reflex, and secondarily, as long as the patient is under the effect of sedation he feels comfortable and will not make any attempt to bring up the secretions. Many of the patients who showed both clinical and roentgen signs of early atelectasis improved spontaneously as soon as the amount of sedation was reduced or eliminated. The clinical observations of Tucker and Wolferth[11] on this phase of atelectasis are convincing.

Group (6). In recent years, with the increased use of intratracheal anesthesia, there is the possibility of more patients developing atelectasis if not carefully managed. The presence of a large catheter in the glottis of the larynx prevents the vocal cords from approximating and secretions can thus be readily aspirated into the tracheobronchial tree. Unless properly removed they may very well precipitate atelectasis.

Diagnosis

The onset of massive atelectasis is associated with such characteristic clinical findings as a sudden rise in temperature, pulse, and respirations and marked respiratory distress that the diagnosis in this type is quite apparent. If it is due to the aspiration of large amounts of vomitus or thick secretions, the onset may be sudden and the patient never react from the anesthesia. However, its onset may not be evident for several hours after operation, and in the forms due to injudicious use of narcotics it may not be precipitated until the second or third day after operation. Again, in the milder type, the onset may be slow and never attain the massive stage. Because of this variation in degree and time of onset, it is evident that the clinical picture may vary in different patients. Mastics has classified atelectasis into 4 clinical types—fulminant or massive type, moderate type, late or mild type, and transient or evanescent type.

Personally, I believe that the anatomic classification according to the degree of pulmonary involvement as first suggested by Churchill and Holmes[12] and also advocated by Lee and Tucker offers a more definite nomenclature, namely: (1) massive—all lobes of one side involved; (2) lobar—limited to one or two lobes; (3) lobular—part of one lobe only involved.

That such a differentiation exists roentgenologically has been shown by Manges.[13] In true atelectasis there is always an associated shift of the heart and mediastinal structures to the affected side. This displacement is proportionate to the extent of pulmonary involvement.

The importance of x-ray examination to confirm the suspicion of atelectasis cannot be stressed too strongly, since the proper films will eliminate the possibility of other postoperative complications such as postoperative hemorrhage, pulmonary embolism or infarction, coronary disease, pleurisy with or without effusion, pneu-

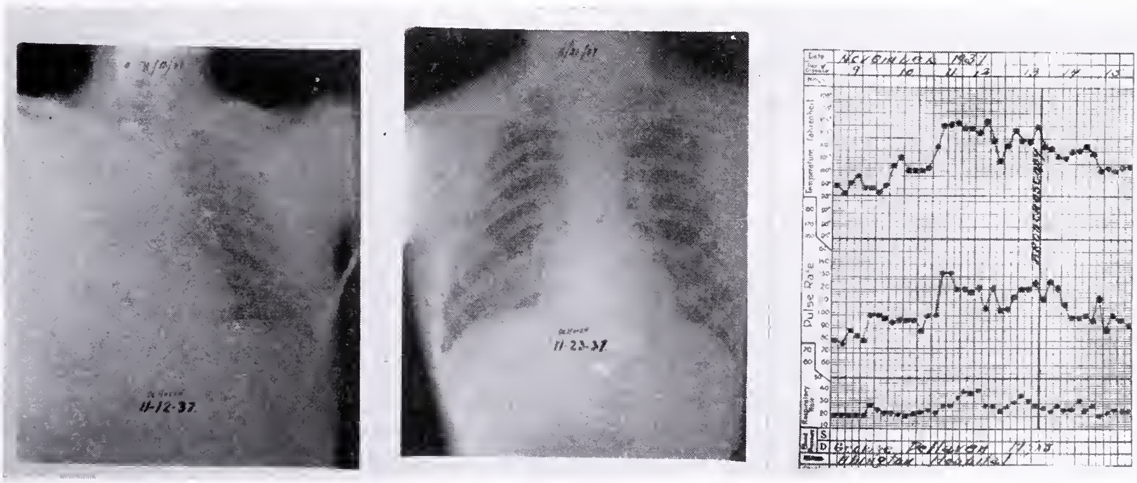

Fig. 1, Case 1.

mothorax, and subdiaphragmatic abscess. If the patient is too toxic to be moved, a bedside film in many instances will give valuable information.

Treatment

Since atelectasis was first recognized as a definite clinical entity, many types of treatment have been advocated and used. Since the onset of atelectasis is primarily due to mechanical obstruction to normal airway of the involved lung, any form of treatment directed towards the removal of the obstruction will prove efficacious. Smith and Davidson called attention to the importance of an active cough reflex in the spontaneous recovery of these patients. They observed that as soon as the patient was able to expectorate large amounts of secretion, there was marked clinical improvement with recovery.

The original work of Tucker in utilizing bronchoscopic aspiration opened up a new field in the treatment of these cases. Since that time —numerous cases have been treated bronchoscopically. Perrone[14] and others have reported a series of cases treated by this method. In spite of the remarkable results obtained by the bronchoscopic aspiration of these patients, I do not feel that all cases of postoperative atelectasis should have bronchoscopy. Many of the mild types will clear up spontaneously if a definite routine is carried out as preliminary palliative treatment when atelectasis is suspected.

First, evaluate the extent of toxic manifestation of the patient. If clinically and roentgenologically the degree of pulmonary involvement is small and the patient appears alert, it would be wise to temporize by stimulating voluntary expectoration. This can be achieved by protecting the operative area with a snug binder so as to enable the patient to cough more effectively without undue pain. Hyperventilation with 95 per cent O_2 and 5 per cent CO_2 using a face mask for 10 minutes every hour is very effective.

Postural drainage by turning the patient to the unaffected side often produces results. The undue use of morphine and other drugs that depress the cough reflex should be eliminated. The use of atropine should also be avoided as it only makes the secretion thicker and more difficult to aspirate.

If the foregoing procedures do not produce a definite amelioration of the patient's condition, bronchoscopy should be carried out. In all the cases of massive atelectasis associated with definite toxic manifestations of the patient, no time should be wasted in trying these procedures; bronchoscopic aspiration should be undertaken immediately.

The method of passing a catheter blindly into the trachea should be discouraged for two reasons; first, in the inexperienced hand a great deal of trauma may be produced in the larynx proper by the blind manipulation. Second, when the catheter passes between the cords, they will go into spasm, making the patient more dyspneic.

I also believe that bronchoscopic inspection and aspiration should be utilized in all cases of postoperative atelectasis where there is suspicion of reaspiration into the tracheobronchial tree of vomitus, since this would be the only sure means of eliminating the presence of a foreign body.

In the hands of a skilled bronchoscopist the bedside technic as advocated by Tucker,[15] where the patient is placed obliquely across the bed with the head and shoulders slightly over the edge, may be used. This eliminates moving the patient. Oxygen is given to the patient through the bronchoscope throughout the procedure. Bronchoscopic aspiration is always carried out under local anesthesia.

Summary

An analysis of a series of 30 cases of postoperative atelectasis aspirated bronchoscopically is outlined in Table II.

Table II

Analysis of Series of 30 Cases Treated Bronchoscopically

Type of Operation	*No. of Cases*	*Type of Anesthesia*
Appendectomy	4	Gas-ether-spinal
Postpartum	3	Gas-ether
Exploratory laparotomy	3	Gas-ether
Resection of bowel	1	Gas-ether
Cholecystectomy	6	Gas-ether
Repair of umbilical hernia	1	Gas-ether
Application of cast	1	General-ether
Circumcision (8-day-old infant)	1	Local
Craniotomy	1	General-ether
Ureteral catheterization for removal of calculus	1	Local
Thoracoplasty	7	Local
Ruptured ectopic pregnancy	1	General-ether
Total	30	

Of interest in glancing over this table is the fact that 9 of the 30 patients never received general anesthesia. The cases of thoracoplasty were aspirated through the courtesy of Dr. Richard H. Meade, Jr., and cover a period of several years. The youngest member of this series was an 8-day-old infant who developed atelectasis following circumcision under "whiskey and sugar" anesthesia. The oldest patient was a 72-year-old man who had a resection of the

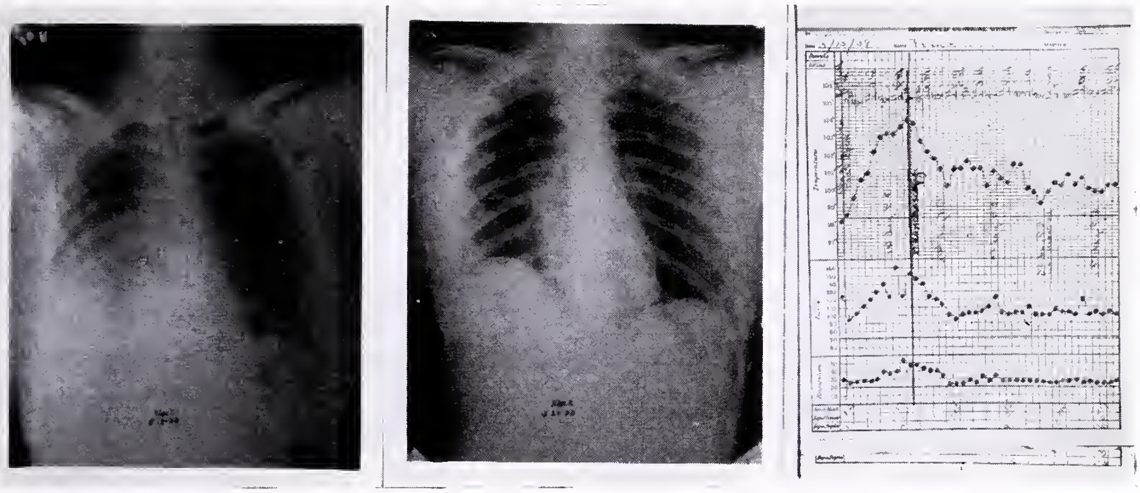

Fig. 2, Case 2.

bowel for malignancy. In 22 patients only one bronchoscopic aspiration was necessary. In 4 patients bronchoscopy was carried out twice, and in 2 patients 3 times. One patient had to have 5 bronchoscopic aspirations. One patient was bronchoscoped 8 times. The last 2 patients eventually died.

Conclusion

1. In postoperative pulmonary atelectasis the most important factor is the dislodgment of the secretion blocking the normal airway.

2. Palliative measures such as hyperventilation, postural drainage, and stimulation of the cough reflex should first be tried.

3. If unsuccessful, bronchoscopic aspiration should be carried out.

4. This may be done at the bedside when indicated.

5. The use of morphine and other sedatives that inhibit the cough reflex should be avoided.

6. Thirty cases of postoperative atelectasis aspirated bronchoscopically are reviewed. Five of these cases are presented in detail.

7. In massive postoperative atelectasis bronchoscopic aspiration should be carried out immediately.

Case Reports

CASE 1.—G. deH., white male, age 17, was admitted to the Abington Hospital, Nov. 9, 1937, on the service of Dr. Sylvis, with symptoms of acute appendicitis. An appendectomy under NO_2O_2 and ether anesthesia was done on Nov. 10, 1937.

The day following appendectomy the temperature suddenly rose to 103.8 F., pulse 134, respirations 50, and the patient began to complain of pain in the right side of the chest. On physical examination, the percussion note over the right lower half of the chest was dull. Breath sounds were barely audible. Pneumonic consolidation with a possibility of pleural effusion was suspected. Repeated attempts to localize any fluid collection by thoracentesis were negative.

X-ray of chest, Dr. Zulick, Nov. 12, 1937: "The right side of the chest, with the patient lying on his back, is opaque from the diaphragm to the summit of the apex. The heart is not displaced toward the affected side as far as one would expect it to be in the

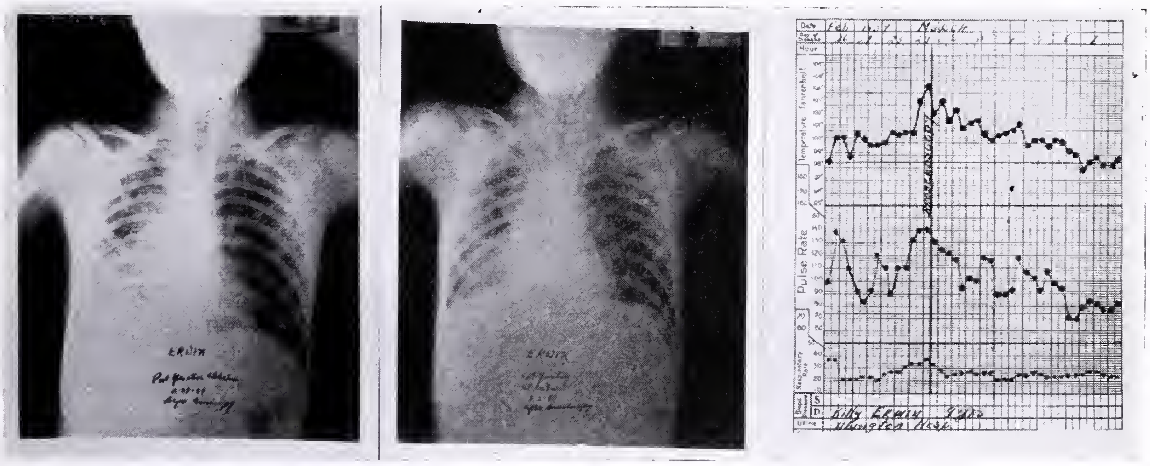

Fig. 3, Case 3.

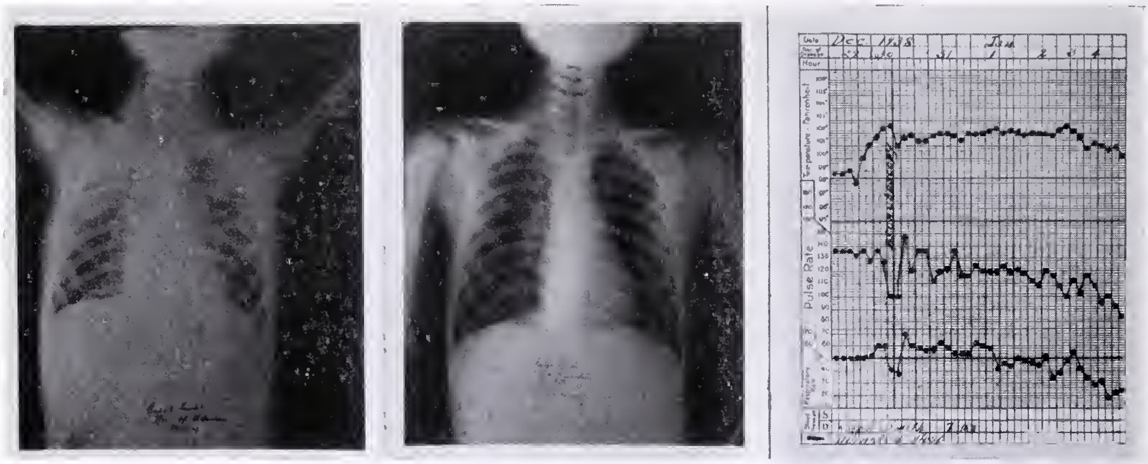

Fig. 4, Case 4.

presence of a massive collapse, while on the other hand it is not displaced at all to the left as it should be in the presence of a massive effusion. It would help materially if we were allowed to expose a film in the sitting posture.

"A film exposed in the sitting posture shows the upper level of the opacity to be at the level of the fourth rib posteriorly. This indicates, I think, that the opacity is due to a rather massive effusion" (see illustrations).

A bronchoscopic consultation was requested.

Because of the positive physical findings and unsuccessful attempts to obtain fluid on repeated thoracentesis, I felt that bronchoscopy was definitely indicated in spite of the suspected existence of pleural effusion on x-ray examination.

Bronchoscopy: On exposure of the larynx by means of the laryngoscope, a large amount of pus, thick and yellowish in nature, was coughed out of the upper part of the trachea. On introduction of the bronchoscope into the trachea, the gurgling of pus could be clearly heard. There was a tremendous amount of pus present which practically occluded the lumen of the right main bronchus because of its thick consistency. There was a small amount of overflow into the left main bronchus. The mucous membrane of the lower part of the trachea and right main bronchus appeared acutely inflamed and beefy in nature. About 3 ounces of pus was aspirated. Following bronchoscopy the patient was placed on hyperventilation with 95 per cent O_2 and 5 per cent CO_2, coughing and expectoration being encouraged. Twenty-four hours after bronchoscopy the temperature, pulse, and respiration had returned to normal and the patient was discharged 15 days after operation. In reviewing this case, I feel that if bronchoscopy had been carried out immediately rather than on the third day after the original onset of symptoms, the stay in the hospital might have been shortened.

CASE 2.—Mrs. F. B., age 24, white, was admitted to Mt. Sinai Hospital, May 13, 1938, on the service of Dr. Joseph Edeiken, with a ruptured ectopic pregnancy. On admission the blood pressure was 40/0.

Following operation, signs of massive collapse developed as evidenced by physical signs over the right side of the chest and a sudden rise in temperature, pulse, and respirations.

X-ray of chest, Dr. Edeiken, May 13, 1938: "There is a marked increase in density in the right middle, and lower lobes. The right diaphragm is obscured. The heart and mediastinal contents are markedly retracted to the right. The changes present would indicate a massive collapse of the right lower and possibly right middle lobes. No other abnormalities are observed" (see illustrations).

Bronchoscopic examination: On exposing the larynx a large amount of pus was seen in the larynx proper

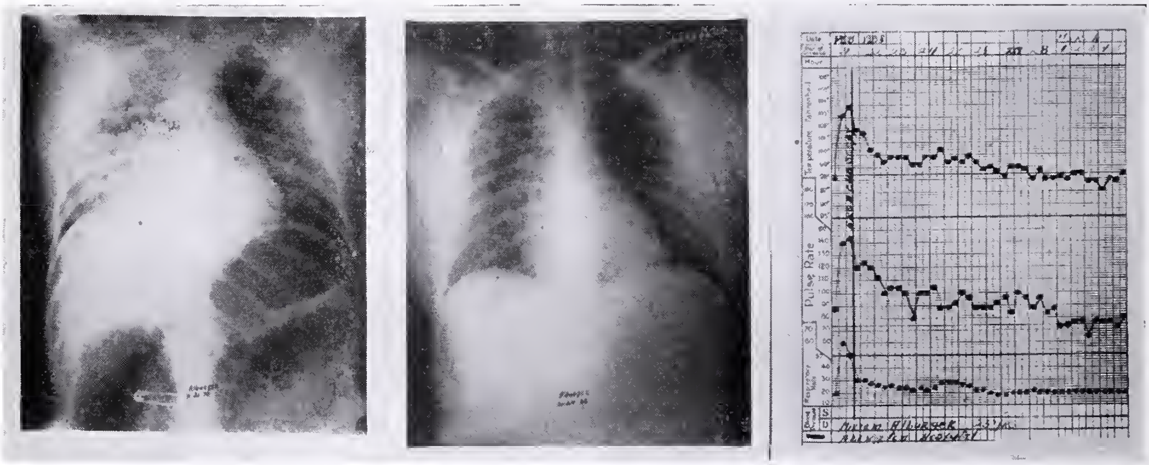

Fig. 5, Case 5.

and the gurgling of more pus was heard in the upper part of the trachea. A bronchoscope was passed into the trachea and a tremendous amount of thick greenish secretion was aspirated. Most of the secretion appeared to be coming from the right main bronchus, but there was also some overflow into the left side. The right main bronchus appeared somewhat dilated and the spurs of the branch bronchi thickened. The bronchoscopic findings were suggestive of a mild bronchiectasis which had flared up at this time.

Comment: This aspiration was sufficient to relieve the patient of the obstruction created by the accumulation of the thick secretions and her inability to cough them up.

X-ray examination, Dr. Edeiken, May 20, 1938: "At this time I am unable to demonstrate any abnormality in the lungs."

This patient was discharged completely recovered 14 days after admission.

Case 3.—W. E., white male, age 9, was admitted to Dr. Damon B. Pfeiffer's service at Abington Hospital on Feb. 26, 1939, with symptoms of appendicitis. The appendix was removed under NO_2 and ether anesthesia. The child returned to the ward in good condition. On the second day postoperatively the temperature rose to 104.4 F., pulse 140, and respirations 36.

Physical examination of the chest revealed impaired breath sounds, dullness to percussion, and poor expansion of the right lower half of the chest. Râles could be heard over the same area. The child developed a feeble cough which was productive of thick, tenacious, yellow secretion.

X-ray of chest, Dr. Zulick, Feb. 28, 1939: "There is a homogeneous opacity in the right lower lung field. The heart is displaced to the right with slight elevation of the right diaphragm. The opacity is due either to pneumonic consolidation or atelectasis of the right lower lobe" (see illustrations).

In view of the above findings, bronchoscopic consultation was requested and bronchoscopy performed.

Bronchoscopy for aspiration: Bronchoscopic examination revealed the mucous membrane of the tracheobronchial tree to be markedly inflamed. The lower part of the trachea contained a large amount of thick, yellow secretion. The right main bronchus was filled with thick mucoid, sanguineous secretion which was aspirated with difficulty. After cleaning out the main bronchus, more secretion could be seen coming from the lower lobe spurs with each cough. A small amount of secretion was also present in the left main bronchus. About 1½ ounces of secretion was aspirated bronchoscopically.

Following bronchoscopic aspiration, the secretions became thinner. The temperature, pulse, and respirations dropped remarkably. The child was encouraged to expectorate secretions and no further bronchoscopic aspiration was necessary. The patient was discharged from the hospital 10 days after the appendectomy.

X-ray examination of the chest on Mar. 2, 1939, showed the opacity of the right lower lobe to be entirely cleared up.

Case 4.—R. S., white male, age 7, was admitted to the Abington Memorial Hospital, Dec. 29, 1938, on the service of Dr. Damon B. Pfeiffer, after being struck by a trolley car. On admission the child appeared to be in shock and exploratory laparotomy under NO_2O_2 and ether anesthesia was done because of the possibility of intra-abdominal hemorrhage. During anesthesia he reaspirated vomitus and 8 hours after operation the temperature steadily rose to 102.8 F., pulse 150, and respirations 70.

Physical examination revealed loud râles in both sides of the chest, but more marked on the left side. There was some impairment of percussion over the entire right side of the chest.

X-ray examination, Dr. Zulick, Dec. 29, 1938 (see illustrations: "There is an abnormal shadow extending from the second interspace anteriorly on the right side to the summit of the apex. Similar shadows are found in the left first interspace anteriorly and at the inner end of the left second rib. With a known history of aspiration of foreign material the first thought is of an atelectasis with inflammatory reaction due to foreign bodies."

Bronchoscopic consultation was requested and bronchoscopy was carried out.

Bronchoscopic examination revealed that the trachea contained a large amount of thick secretion. The right main bronchus was full of secretion which was blood-tinged in nature. A large amount of the same type of secretion was present on the left side. After aspiration of the secretion, careful inspection of both right and left main bronchi did not reveal the presence of any foreign body. The secretion aspirated bronchoscopically several ounces in all, was full of small food particles.

Following bronchoscopy the patient was encouraged to cough frequently. Sedation was discontinued and he showed such marked improvement that no further bronchoscopic aspirations had to be carried out. He was discharged from the hospital, 13 days after admission, completely recovered.

Case 5.—Mrs. M. A., age 25, white, was admitted to the Abington Hospital on the service of Dr. William L. Noe for delivery of a full-term pregnancy. While undergoing anesthesia the patient vomited and aspirated some of the vomitus. She became cyanotic and quite dyspneic and toxic. The temperature suddenly rose to 103 F., pulse 140, and respirations 60.

Physical examination of the chest revealed loud gurgling râles in the right side of the chest. Less coarse râles were heard over the left side. Breath sounds barely audible over the lower right part of the chest and percussion note revealed marked dullness over the entire right side of the chest.

X-ray examination, Dr. Zulick, Nov. 21, 1938 (see illustrations): "There are numerous coarse mottled areas throughout the entire lung field on the right side. On the left side there are several areas of coarse mottling to a lesser degree in the fifth and sixth interspaces posteriorly. The heart and trachea are not displaced and neither diaphragm is elevated."

Bronchoscopy for aspiration: Because of the patient's extremely toxic and serious state, bronchoscopy was performed at the bedside. By means of an oxygen attachment on the bronchoscope, the patient was given O_2 during the procedure. On bronchoscopic examination, the gag and cough reflex were totally abolished. The lower part of the trachea was full of watery secretion which had the odor of sour food. The right main bronchus showed the presence of some larger food particles which were removed by side curve forceps. The secretion aspirated from both the right and left main bronchi was full of small undigested food particles. About 2½ ounces of secretion was aspirated.

Following bronchoscopy the patient became rational. The cyanosis and dyspnea disappeared and she showed a remarkable change.

Twelve hours after bronchoscopy the temperature and respirations had returned to normal. The pulse rate remained slightly elevated. This patient was discharged from the Abington Hospital 10 days after delivery.

X-ray examination of the chest on Nov. 24, 1938, revealed normal aeration of the entire right lung.

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ABSTRACT OF DISCUSSION

Richard H. Meade, Jr. (Philadelphia): Dr. Lell spoke briefly of the etiology of postoperative atelectasis, indicating that it is still not perfectly clear. The condition that causes the atelectasis is obvious, that is, obstruction to the bronchus, but in certain instances the cause of the obstruction is still unexplained.

I should like also to emphasize the importance of diagnosis, which is obvious. Dr. Lell did not, I believe, give enough credit to the nonbronchoscopic methods of treating this condition. In certain conditions the bronchoscope is the only means of relieving the obstruction, but in the majority of cases of postoperative atelectasis, especially when occurring after operations on other parts of the body than the chest, just moving the patients and stimulating them to cough will help them to relieve the obstruction themselves. In certain other cases this is not so readily accomplished, particularly in a tuberculous patient who has had a thoracoplasty.

We are more interested in the obstruction that may occur to the good lobe in those instances where the patient is already handicapped by collapse of one part of the lung and partial collapse of the remaining part may be fatal.

Another important factor in these cases is that they are unable to cough effectively because a number of ribs have been removed. In these cases, bronchoscopy is important. No one would be willing to say that bronchoscopy is a perfectly benign procedure, but I would certainly say that it is not terribly upsetting and the relief obtained is so dramatic that in a short time the patient will forget whatever discomfort he may have had during the procedure, judging by what I have seen of Dr. Lell's work.

SULFANILAMIDE EFFECTIVE AGAINST FLARE-UPS OF RHEUMATIC FEVER

Evidence that the maintenance of certain levels of sulfanilamide in the blood by means of administering small daily doses is effective in preventing hemolytic streptococcic infections and the consequent flare-ups of rheumatic fever in persons known to be subject to recurrences is presented in *The Journal of the American Medical Association* for July 19 by A. F. Coburn, M.D., and L. V. Moore, M.D., New York.

The two authors point out that a previous study had indicated that the maintenance throughout the school year of a certain level of sulfanilamide in the blood protected the children against streptococcic pharyngitis and rheumatic recrudescences. "One factor that it was impossible to control in the New York study," they say, "was the increasing age of the group. Between 1936 and 1939 many of the children passed puberty, and, as is well recognized, rheumatic subjects tend to have fewer recrudescences in adolescence than during childhood. It was therefore possible to regard the increasing age of our patients as largely contributory to the decreasing incidence of rheumatic fever.

"One way of determining whether increasing age was significant in our results was to withdraw sulfanilamide from the patients who received prophylactic doses in the period 1936-1939. This we did during 1939-1940 to a group of 100 patients, mostly adolescents. None of these 100 patients had had streptococcic pharyngitis or manifestations of rheumatic activity while they received sulfanilamide. Since the prophylactic doses have been discontinued, the patients have lived in the same environment and have received the same clinical and laboratory examinations as previously reported. Thirty-two of these 100 patients contracted hemolytic streptococcic pharyngitis during the first 12 months following the withdrawal of sulfanilamide, and in 40 per cent of these untreated, infected patients rheumatic fever developed. . . .

"These follow-up observations show that the rheumatic children who escaped streptococcic infection and rheumatic activity while receiving sulfanilamide prophylactically between 1936 and 1939 were still susceptible in 1940 to both streptococcic pharyngitis and rheumatic fever.

"It seems justifiable, therefore, to conclude that the absence of rheumatic recrudescence in the sulfanilamide-treated subjects previously reported was due to the drug and not to a change in susceptibility. It is also clear that the prophylactic effect of sulfanilamide does not exert any beneficial effect beyond the period of treatment."

It is the privilege of but few men to have been continuously active in medical practice for more than 60 years, yet one has been active enough in 1940 to travel 1800 miles to take a leading part in an important discussion on conservation of vision at the annual session of the medical society of his native state, of which society he had been a prominent member for many years. Look up one such on page 1532; remember that he taught ophthalmology in Philadelphia from 1888 to 1908 and later in Denver, Colo., and that he is equally well known as an author and editor.

ACUTE APPENDICITIS

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Pittsburgh, Pa.

MANY, I think most of us, may remember a full-page advertisement by a well-known publisher which, for several years, appeared on the pages of weekly and monthly periodicals. According to the printer, no one could afford not to possess a book of several volumes entitled, as I recall, "Famous Personages of History." About one-half the page was devoted to the picture of a well-known "Man on Horseback" with the caption "Napoleon's name fills more pages of the world's solemn history than that of any other individual." True for the man, but if compared with just one individual subject of human interest, the vermiform appendix, Bonaparte must be rated a "wash out." In the parlance of the race track, "he would die at the post." During only the 5 years ending Dec. 31, 1939, the Index Medicus lists 2329 published articles dealing with appendicitis. The number of those escaping the printer, but written in the same 5 years, and the vast area which could be covered by the pages in medical literature devoted to this disease in the preceding 60 years, God alone knows.

James Copland in 1834 was the first to identify the appendix as the most frequent anatomic seat of acute abdominal pathology and pointed the way toward elimination of the now forgotten terms, iliac abscess, phlegmon of the iliac fossa, typhlitis, perityphlitis, and cecitis. We are indebted to the pathologist, not the clinician, for the discovery that the seat and causes of acute lower right abdominal disease, pericecal abscess, and appendicular peritonitis (With, 1880) are usually complications of ulceration and perforation of the appendix.

Etiology

"The etiologic importance of the presence of fecal masses and of foreign bodies in the production of inflammation of the appendix is well recognized. Matterstock (1880) found that in 169 cases of fatal perforating appendicitis fecal concretions were present in 53 per cent and foreign bodies in 12 per cent. Thus, in about three-fifths of all cases either dried feces or foreign bodies were present in the tube. The evidence is not always sufficient to exclude the possibility of a mistake having been made as to nature of the foreign body. By far the most numerous are moulded masses of inspissated feces, more or less cylindric in shape, some of the consistency of normal excrement, others of stony hardness. The relative frequency of their presence in the appendix is manifested by the records of fatal cases of appendicitis.

"In my own experience it is rather the rule than the exception for the appendix to contain moulded, more or less inspissated feces. Many are overlooked at the time of examination, others are macerated in the contents of the abscess. Still others, perhaps, escape with the pus. The inflammatory process, once excited, its course and results, shows extreme variations. A simple catarrhal appendicitis is to be recognized anatomically, *but* it is doubtful whether its clinical appreciation is possible. On the other hand, the ulcerative process becomes associated with necrosis of the wall, perforation, and usually circumscribed at the outset, a peritonitis. An abscess may form; it may become absorbed; suddenly diminish in size with the discharge of pus from a hollow organ, as the intestine, bladder, or vagina; or escape into the general peritoneal cavity when, as a rule, death rapidly follows."

"The more protracted the course of the disease, the greater is the probability of the destruction of the peritoneum forming the wall of the abscess."

"There can be but little doubt that the diagnosis of bilious attack, colic, gastritis, enteritis, gravel, ovaritis, congestion of the womb, and the like, may not infrequently conceal the existence of an inflamed appendix."

"The chief danger from appendicular peritonitis is that it becomes general."

"In one of the cases in which this symptom (general abdominal pain) appeared on the first day, death occurred on the fourth day. There

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Read before the Section on Surgery of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.
From Landon Surgical Clinic, West Penn Hospital, Pittsburgh.

was no perforation of the appendix, although this structure presented a deep purple color and contained a fecal concretion. General peritonitis was present."

"The second and third days are those which include the largest number of cases of beginning peritonitis. The speedy death of the patient almost invariably results. Operative interference is demanded before this time in two-thirds of all cases, hence but one-fourth may be expected to undergo resolution."

"A cathartic or a laxative may be demanded by the patient or friends and an enema may be thought advisable as a diagnostic aid. It is to be remembered that these may be the means of at once exciting a general peritonitis."

"If not operated, to keep the bowels quiet should be the first and last thought—absolute rest in bed, liquid diet in small quantities, and, above all, sufficient opium to neutralize pain. If after the first 24 hours from the onset of severe pain the peritonitis is evidently spreading and the condition of the patient is grave, the question should be entertained of an immediate operation for exposing the appendix and determining its condition with reference to its removal."

"The vital importance of the early recognition of perforating appendicitis is unmistakable. Its diagnosis in most cases is comparatively easy. Its eventual treatment by laparotomy is generally indispensable."

Not one bit of the above is the product of the writer. It is quoted from the article by a great pathologist, Reginald H. Fitz,[1] written and published exactly 54 years ago, in October, 1886. Except for those principles due to the advantages afforded by the safety of modern surgery, can one add anything worth while to the basic principles then enunciated concerning the etiology, the pathology, and the dangers of fatal complications arising from mistaken diagnosis, physic in the presence of abdominal pain, and procrastination in the operative treatment of acute appendicitis when it is still appendicitis?

At the other end of the scale of time, we have been recently afforded the epochal and most valuable report by this society's Commission on Acute Appendicitis Mortality. Dr. Bower and all others of this committee deserve our deep appreciation for their arduous labors in the making and the instructive results of their survey of one year's hospital records throughout the state of 20,000 cases of this disease, which clearly places, where it belongs, the responsibility for the avoidable deaths of over 1000 persons in Pennsylvania during only one year, 1937. In this same year over 17,000 individuals in the United States succumbed, in most part, to the unnecessary complications of neglected appendicitis.

In view of all these facts, the writer humbly apologizes for adding to the already burdensome literature a review of the clinical records of some 962 consecutive cases of acute appendicitis, all operated upon by him or under his direction. Only those cases are included in which the diagnosis was proven beyond doubt by the operative findings. Constant reiteration is, however, necessary if we are to maintain, or hope to further, the control of appendicitis-peritonitis.

Sex and Age Incidence

Sex appears to have no influence upon susceptibility to acute disease of the appendix. Of our 962 patients (Table I), there was an almost equal number of each. There is but one practical application of this observation, i.e., that when in the presence of acute right lower abdominal disease in women there is the slightest doubt in differential diagnosis, one should be most cautious in assuming its origin in the adnexa the more likely.

Table I

Sex and Age Incidence in Acute Appendicitis

Total cases		962
Male	464	
Female	498	

Age Distribution

1-12	13-20	21-30	31-40	41-50	51-60	61-70
123	312	257	128	46	23	13

91 per cent under 40 years of age
9 per cent over 40 years of age
13 per cent under 12 years of age

As expected, acute appendicitis is shown to be a disease of the first 4 decades; 91 per cent of the patients in our series were under 40 years, only 9 per cent over this age.

In children of 12 years and under there were 123 cases. A brief analysis (Table II) of those in this age bracket conveys a significant warning. While they comprised 13 per cent of the total number of our patients, they contributed 24 per cent of the mortality. While 3.3 per cent of the children in this group died, the mortality in the whole series was but 1.8 per cent. Peritonitis, general or local, and abscess obtained preoperatively in 25 per cent of the children, and in but 16 per cent of patients above this age. The incidence of generalized peritonitis was more than thrice that complicating the adult cases.

While, as we well know, the early diagnosis of

TABLE II

ANALYSIS OF ACUTE APPENDICITIS IN CHILDREN UNDER 12 YEARS

Total cases		123
Acute diffuse	61	
Purulent	19	
Gangrenous	12	
Local peritonitis	16	
General peritonitis	12	
Abscess	3	
Number of deaths		4

Mortality in children 3.3 per cent.
Mortality in whole series 1.8 per cent.

Children make up 13 per cent of total cases.
Children make up 24 per cent of total mortality.

Incidence of general peritonitis in adults 3 per cent.
Incidence of general peritonitis in children 10 per cent.

acute appendicitis in children is more difficult, the administration of cathartics more likely, and parental consent for operation frequently delayed, I do not believe that these factors are entirely or chiefly responsible for the increased hazards. Both the general and particularly the local peritoneal resistance to infection is lower in children than in adults. There has not been time for the establishment of those defense mechanisms later to be acquired through repeated assaults. This higher mortality and morbidity in children will be reduced only through earlier surgical intervention. Even the suspicion of an abdominal catastrophe in the child warrants, perhaps I should say demands, the serious consideration of immediate laparotomy. The grave responsibility entailed by procrastination is not always fully appreciated by the physician.

Mortality

In our series of 962 cases, 17 or 1.77 per cent of the patients died. *This is not the mortality of acute appendicitis.* It is a record of the loss of life from, in most part, the avoidable complications of this disease. A glance at Table III will serve to emphasize the truth of the dictum by Dr. Bower and his committee, "There is no appendicitis mortality."

Based upon the degree and extent of pathology recorded at the time of operation, our cases were separated into 6 groups, classified as appendicitis, acute diffuse, acute purulent, acute gangrenous, acute with local peritonitis, acute with general or diffuse peritonitis, and acute with abscess. Out of the total 962 cases, 793 are included in the first 3 groups. Although in many instances the local process was advanced with free fluid present, frequently grossly purulent or fibrinous exudate, and even perforation, we designate them as our "clean" cases inasmuch as there was no gross evidence of peritoneal contamination beyond the immediate neighborhood of the appendix and bacterial cultures of the fluid were usually negative.

Of these 793 patients, 3 or 0.38 per cent died, 2 from peritonitis and another from pylephlebitis and liver abscess. It is quite probable that the first two were so nearly on the borderline that they should have been placed in the peritonitis group. If so, and should we have wished to juggle the figures, there would have been but one death, and that one unavoidable, attributable to appendicitis per se.

Of the remaining 169 complicated cases in this series, 98 had local peritonitis, 36 diffuse peritonitis, and 35 localized abscess or abscesses at the time of operation. Death ensued in 11, or 8 per cent of the total appendicitis-peritonitis group; 25 per cent of the 36 with diffuse peritonitis died; there was an 8.3 per cent mortality in the abscess group from (at the time believed to be) unavoidable catastrophes; 2 died from

TABLE III

MORTALITY IN ACUTE APPENDICITIS

	Whole Series	*Acute Diffuse*	*Purulent*	*Gangrenous*	*Total "Clean"*	*Local Peritonitis*	*General Peritonitis*	*Abscess*
Cases	962	574	126	93	793	98	36	35
Died	17	1	1	1	3	2	9	3
Mortality	1.77%	0.17%	0.8%	1.1%	0.38%	2.04%	25%	8.3%

Classification Used in This Series

Acute diffuse appendicitis:	Appendix swollen, vessels dilated; occasional edema of meso-appendix.
Purulent appendicitis:	Appendix enlarged, tense, and a reddish color; purulent or fibrinous exudate frequently on peritoneal surface; lumen filled with mucopurulent material.
Gangrenous appendicitis:	Appendix tense or perforated; walls necrotic and black; exudate on peritoneal surface, frequent edema or infiltration of meso-appendix.
Acute appendicitis with local peritonitis:	Acute appendicitis with free pus about region with peritonitis of intense nature locally; culture positive.
Acute appendicitis with general peritonitis:	Acute appendicitis with intense purulent or fibrinopurulent exudate beyond field of exposure; positive culture; confirming clinical picture.

TABLE IV

THE USE OF CATHARTICS IN ACUTE APPENDICITIS

	Acute Diffuse	*Purulent*	*Gangrenous*	*Local Peritonitis*	*General Peritonitis*	*Abscess*
Total number of cases	574	126	93	98	36	35
Number purging	44	23	27	32	19	8
Number purging more than once	5	3	2	6	6	2
Per cent purging	8%	18%	29%	33%	53%	23%
Average days sick before operation	2.1	1.5	2.2	2.4	2.7	...
Mortality	0.17%	0.8%	1.1%	2.04%	25%	8.3%

postoperative pneumonitis, and one from secondary subdiaphragmatic abscess.

Cathartics and Death

Most encouraging are the results of the public educational program initiated and sponsored by our profession as evidenced by an increasing appreciation by the laity of the dangers attendant upon the indiscriminate administration of cathartics for "bellyache." More and more frequently patients presenting symptoms of acute appendicitis, when asked if they have taken a physic, answer "Oh, no! I wouldn't do that. It may be appendicitis." It is humiliating to note (I hope I am in error) its apparently lesser effect upon the general profession.

Table IV reveals graphically the relationship in our cases of preoperative purging to the incidence of appendicitis-peritonitis and its mortality. No further comment is necessary other than to make a plea for the constant remembrance of those prophetic words, "Procrastination and purgation lead to perforation and peritonitis; peritonitis spells defeat and death."

Procrastination and Mortality

Among the clinical histories of our 962 cases, there were 828 which recorded the time intervening between the appearance of symptoms and operation. The progressive mortality relative to operative delay is shown in the analysis recorded in Table V.

TABLE V

TIME ELEMENT IN ACUTE APPENDICITIS

	Cases	*Died*	*Mortality*
Operated upon within 24 hours	360	2	0.55%
Operated upon within 48 hours	222	4	1.8 %
Operated upon within 72 hours	100	2	2.0 %
Operated upon after 72 hours	146	9	6.2 %

In Table VI there is shown the number of deaths and their causes in each group and also the number and variety of the serious but fortunately nonfatal postoperative complications.

In Table VII are recorded the average leukocyte count and the average temperature in each group existent at the time of admission to the

TABLE VI

DEATHS AND COMPLICATIONS IN ACUTE APPENDICITIS

Acute diffuse .... 574 cases

1 Death from general peritonitis and toxemia
6 Partial collapse of lung
6 Acute pyelitis
1 Lobar pneumonia
1 Diphtheria
1 Suppurative epididymitis
2 Bronchitis
1 Psychosis
1 Postoperative ileus
1 Intraperitoneal hemorrhage with residual abscess
1 Dehiscence of wound (McBurney incision)

Purulent .... 126 cases

1 Death from general peritonitis and toxemia
1 Bronchitis
1 Residual abscess
1 Pyelitis
2 Dehiscence of wound (McBurney and right rectus incisions)

Gangrenous .... 93 cases

1 Death from pylephlebitis and liver abscesses
1 Gangrenous gallbladder on thirty-seventh postoperative day
1 Cellulitis of face
1 Dehiscence of wound (right rectus incision)

Local peritonitis .... 98 cases

2 Deaths from general peritonitis and toxemia
2 Postoperative pneumonia
1 Partial collapse of lung
1 Fecal fistula
1 Residual abscess
1 Phlebitis (leg)
1 Cystitis

General peritonitis .... 36 cases

9 Deaths: 5 from general peritonitis and toxemia
    1 sepsis—postoperative shock
    1 pylephlebitis and liver abscess
    1 postoperative shock
    1 hemorrhage from fecal fistula
4 Residual abscesses
2 Fecal fistulas—one associated with cerebral thrombosis and multiple fistulas
1 Bronchitis
1 Cervical lymphadenitis
1 Prolonged drainage from wound

Abscess .... 35 cases

3 Deaths: 2 from postoperative pneumonia
    1 from subdiaphragmatic abscess and sepsis
1 Residual abscess (6 months later)
1 Fecal fistula
1 Intestinal obstruction

hospital. These averages, especially in the uncomplicated cases, are of little or no diagnostic or prognostic significance. The physician who first sees the patient with symptoms and other findings of appendicitis is frequently influenced against seeking surgical advice because of a low blood count and normal temperature. Some in whom at operation there is revealed a most extensive and fulminating pathology, even perforation, have no fever and a normal or even low number of leukocytes. On the other hand, a marked leukocytosis and fever not infrequently accompany an appendicitis of the mildest type.

Table VII

Average Leukocyte Count, Average Temperature, Etc., on Admission to Hospital

	Average White Blood Cell Count on Admission	*Average Temperature on Admission*	*Average Postoperative Days Before Temperature Became Normal*	*Percentage of Cases Drained*
Acute diffuse ...	10,870	98.66	4.0	2.3
Purulent	13,890	99.46	4.87	7.1
Gangrenous	15,590	99.82	5.87	29.0
Local peritonitis .	14,430	100.22	7.06	59.2
General peritonitis	17,690	100.98	12.17	100
Abscess	15,180	100.82	7.25	100

Table VII also shows the percentage of cases in each group which were drained. The question of drainage is perforce dependent upon the judgment of the individual surgeon in the individual case. With increased experience, we have in recent years employed drainage less and less frequently in the nonperitonitic cases and even in those with localized peritonitis. All of our cases with generalized peritonitis were drained, not, of course, with any thought of draining the peritoneal cavity, but for the purpose of permitting the escape of pus and thus limiting at least further feeding of the diffusing process from the focus of origin. All abscesses were drained, of course.

In 962 appendectomies, spinal analgesia was employed in 527 or 57 per cent; ether in 387; N20-0 in 37; avertin in 8; and local novocain alone in one case. During the past 5 years spinal analgesia has been used, except in children, in at least 95 per cent of our appendix operations.

I am convinced that spinal analgesia has contributed in large part toward a lessened morbidity and mortality. Much has been and is still being said about the dangers and complications of intraspinal block. In the author's personal experience, it has been employed during the past 15 years in over 6000 operations upon the abdomen and lower extremities. There has not been a single fatality or complication which could be attributed to its use. There are, of course, certain precautions to be used in its selection. I hesitate to use it in the presence of advanced vascular disease with high blood pressure. I have not given it to children under the age of 10, but I do not hesitate to employ it when necessary for patients in shock and those with low blood pressure.

Table VIII

Anesthetics and Incisions in Acute Appendicitis

Anesthetics	*Cases*	*Incisions*	*Cases*
Spinal	527	McBurney	887
Ether	387	Right rectus	59
N20	37	Mid-line	16
Avertin	8		
Local	1		

The operative approach by the McBurney incision has been employed in 887 or over 90 per cent of our operations for appendicitis. I shall continue to use this incision. When other incisions were used, in most instances it was because of mistaken or most uncertain preoperative diagnosis.

Conclusions

From a review of 962 consecutive cases operated upon for acute appendicitis or its complications, it is apparent that:

1. There should be no loss of life from acute uncomplicated disease of the appendix.

2. Education of the laity regarding the dangers of cathartics and the necessity for early medical advice in the presence of acute abdominal pain has borne fruit and must be continued.

3. Further reduction in mortality from appendicitis-peritonitis would accrue through the earlier recognition of the presence of acute appendicitis and the physician's understanding that fever and leukocytosis are not essential findings or even ordinarily present in the early stages of the disease.

4. While appendectomy is usually a relatively simple procedure, it may be fraught with the greatest difficulties and tax the ingenuity and best judgment of the most experienced surgeon. Certainly the responsibility for the complicated cases should be borne by the experienced surgeon and not by the casual operator.

My sincere appreciation is due my assistant, Dr. John C. Ewing, for his conscientious efforts in reviewing the case records and collecting the statistics which made possible this paper.

REFERENCE

1. Fitz, Reginald H.: Perforating Inflammation of the Vermiform Appendix, *Am. J. M. Sc.*, No. CLXXXIV (Vol. 92), p. 321-346, October, 1886.

ABSTRACT OF DISCUSSION

John P. Griffith (Pittsburgh): I feel that no one need apologize for presenting the subject of acute appendicitis when we are confronted with the fact that in our own state of Pennsylvania we have 1000 deaths each year as a direct result of acute appendicitis. The failure to recognize acute appendicitis early is the usual cause for the aforesaid high mortality.

I am quite convinced that it is necessary at times to suspect acute appendicitis from symptoms alone, keeping in mind that all cases of acute appendicitis have, as the initial symptom, *abdominal* pain, which may be mild to moderately severe. Rigidity may be quite variable, as in the appendix located retrocecally or low in the pelvis. Tenderness, however, is always present if a systematic search is instituted. A low-lying appendix, as is seen in children quite often, and particularly while the inflammation is confined to the appendix, will yield tenderness only by rectal examination.

While pain is always a necessary symptom in the early stages of acute appendicitis, the temperature may be quite negligible; nausea or vomiting may be absent. Constipation is the usual finding, but diarrhea may be present, as in those cases antedated by an enterocolitis or where the appendix is located low in the pelvis producing irritation to the distal sigmoid. The picture of abdominal pain and constipation often invites the catharsis so prevalent among the laity. Time, which is so precious, is lost waiting for the effect of the cathartic.

You have heard the statistical data given by the essayist, which is comparable to any I have seen. He mentions the mortality in children as 3.3 per cent, whereas the mortality in the general number of cases was 1.8 per cent. Again, the time element, as portrayed by his table, is very instructive.

I thoroughly agree with Dr. Landon in his method of approach, the McBurney incision, which minimizes abdominal wall trauma and is less likely to be followed by hernia.

PHYSICIAN'S CAR RANKS AS NEEDED EQUIPMENT

In a profession that is no respecter of timetables, the physician's car is just about as much a part of his professional equipment as his stethoscope or thermometer.

Because the hurry call to a patient's home may come at noon, midnight, or dawn, the doctor must keep his medical kit ready and his car on hand 24 hours a day.

As a result, the medical man leads all occupational groups in the number of round trips rolled up annually. His speedometer also ticks off more total miles in the course of a year than any other group, with the sole exception of traveling salesmen.

Such statistical facts, gleaned from nation-wide study of the motor car's use, cannot measure the benefits to the sick and suffering which have resulted from the swift mobility of the doctor's car. Resident's of rural areas, who had been far from a doctor's service in the horse-and-buggy days, are especially aided.

Data on car use show that the doctor's automobile is very much of a business vehicle. Nine out of 10 doctors who own automobiles use them in their professional work. The great bulk of their trips are concerned with transportation to and from the office and on professional rounds.

Out of every 100 doctors who use their private automobiles for necessity transportation, it was found that:

Sixteen average more than 1500 trips annually.

Fifteen make from 1000 to 1500 trips per year.

Ten reported from 800 to 1000 round trips by car per year.

Twenty-eight range from 400 to 800 trips annually.

Twenty-two average from 200 to 400 trips.

Only 9 average fewer than 200 round trips a year for necessity driving.

For all car-owning physicians, the average number of round trips annually per car was found to be 947, of which 842 trips or nearly 90 per cent of the total were credited to necessity purposes. Naturally, the length of the trips vary from a few blocks to many miles, depending on the doctor's location and the range of his practice.

In rural areas, one-half of the trips made by doctors for business purposes average more than 15 miles in length. In larger cities, 4 out of 10 physicians' cars average this distance or more. (As it is not unusual for a doctor to make a series of calls on a single trip, the city practitioner may cover a considerable distance before returning to his office.)

Of all groups of car users, the doctors' cars rank next to the top, their average distance traveled in a year being 12,932 miles per car. And, according to surveys, necessity driving accounted for 8640 miles of the total. By comparison, traveling salesmen who lead the occupational list of car users, have an average annual mileage of 18,791 miles, although their number of round trips is less.

The doctor's annual total of 12,932 miles per car is more than twice as high as the 5750 miles rolled up by farmer-owned cars. And the use frequency of 947 round trips a year reported by the doctors is nearly 2½ times the 392 trips averaged by the farm car; yet, on a percentage basis, 66 per cent of the doctor's mileage and exactly the same figure for farmer's mileage are for economic purposes.

The medical man uses his car 9 times for necessity transportation for every social and recreational trip, although the latter is likely to be 3 or 4 times longer. The average length of a pleasure trip for doctors is about 40 miles, according to available data, compared with a general average of 10 miles per trip for all necessity driving. But all of his social and recreational driving combined adds up on the average to only 4292 miles a year, less than a third of his total.

Occupations which require high mileage and constant use tend to have new or later model cars, as their owners follow a practice of trading frequently. Doctors are in step with this practice. Survey figures show that 89 per cent of doctors' cars were less than 5 years of age and that 33 per cent were one year old or less at the time of a recent count.—*Automobile Facts.*

Active Immunization Against Tetanus By the Combined Subcutaneous and Intranasal Routes

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IT IS now an accepted practice to immunize actively against tetanus by injecting 2 doses of tetanus toxoid, alum precipitated, or 3 doses of the plain toxoid, followed by a "repeat" or "stimulating" injection given a year later or whenever an injury occurs. Recently we reported on the use of the intranasal route for the administration of a specially prepared tetanus toxoid (toxoid topagen) in a series of 145 subjects.[1] We found this method suitable for raising the antitoxin titer after a basic immunity had been established by the injection of 2 or more doses of tetanus toxoid. We now wish to present more extended observations on this combined method of immunization against tetanus.

Forty individuals were given 2 injections of 1.0 c.c. each of tetanus toxoid, alum precipitated, 89 days apart. Because we wished to compare the antigenic value of various preparations of alum toxoid available on the market, we divided our series into 4 groups of 10 subjects each, and administered to each group a different commercial preparation of toxoid (labeled A, B, C, and D). A control bleeding, taken just before the first dose was injected, revealed the presence of less than 0.01 unit of antitoxin per c.c. of blood serum in 28 subjects, 0.01 unit in 7, 0.02 unit in 3, and 0.05 unit in 2 subjects. When tested 28 days after the first dose, 37 subjects failed to show any increase in titer, one showed 0.05 unit, and 2 subjects had 0.10 unit per c.c. All the subjects showed a marked increase in their antitoxin titer when tested 30 days after the second injection of toxoid. The values ranged from 0.25 unit to 10.0 units per c.c. of blood serum (Table I).

Follow-up bleedings revealed a rather rapid drop in titer, although many individuals still had 0.1 unit or more of antitoxin at the end of one year. Judging by (1) the height of the titer produced and (2) the maintenance of the 0.1 unit level, which we consider as the conservative minimum required for protection, it appears that toxoid B had superior antigenic qualities while toxoids A, C, and D followed in that order.

Thirty-one subjects were available for "repeat" stimulation 609 to 678 days (almost 2 years) after the second injection of toxoid had been given. Instead of the usual "repeat" injection of 1.0 c.c. of alum precipitated toxoid, a specially prepared antigen suitable for topical application (tetanus toxoid topagen*) was applied intranasally to this group of patients. The method of administration was simple. The subject was placed on his back with the head in hyperextension, and about 0.1 c.c. of the toxoid topagen was instilled in each nostril through an ordinary glass dropper. No special precautions were taken to insure absorption except that each patient was asked to "sniff up" the drops. Thus the topagen found its way to the throats of many patients. Head colds and mucus in the nose were not considered as contraindications to treatment.

Nine subjects (Group 1, Table II) received 2 daily intranasal instillations (about 0.1 c.c. in each nostril) of tetanus toxoid topagen. The control bleeding taken just before the first nasal treatment revealed the presence of less than 0.10 unit of antitoxin per c.c. of blood serum in 5 subjects; 0.10 unit in 2; more than 0.10 and less than 0.25 unit in one; and 0.25 unit in one subject.

Ten subjects (Group 2, Table II) received 3 daily intranasal instillations of toxoid topagen. The control bleeding revealed that 7 subjects had less than 0.10 unit of antitoxin per c.c.; one had 0.10 unit, one had 0.25 unit, and one had 0.50 unit.

Nine subjects (Group 3, Table II) received 2 intranasal instillations of toxoid topagen given a week apart. The control bleeding showed that 7 subjects had less than 0.10 unit of antitoxin, one had more than 0.10 and less than 0.25 unit,

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* Tetanus toxoid topagen was generously supplied to us by the Mulford Biological Laboratories of Sharp & Dohme, Inc.

and one had more than 0.25 and less than 0.50 unit.

Group 4 (Table II) consisted of 3 subjects that received 3 instillations of topagen in the nose at weekly intervals. Their control titer was less than 0.10 unit.

Follow-up titrations were made in all 4 groups at stated intervals after the first intranasal instillation (Table II). Seventeen subjects were tested on the fifth day. All but two showed no increase in titer. The exceptions were 2 members of Group 3 who showed 0.10 unit. This rise in titer is interesting because it occurred after a single instillation of about 0.1 c.c. of toxoid topagen in each nostril. Of 3 subjects (Group 2) tested on the sixth day, 2 showed a rise in titer from less than 0.10 unit to 0.10 and more than 0.10 and less than 0.25 unit respectively. The third subject showed no change in titer. Twenty-six subjects were tested on the seventh day. Nine of them were members of Group 1 and all but two showed an increase in titer above the control level and sufficient to give protection against tetanus (0.1 unit or more). Of the 2 subjects that had less than 0.10 unit, one had actually shown an increase from a control titer of more than 0.02 and less than 0.05 unit to more than 0.05 and less than 0.10 unit. Of 7 members of Group 2 that were tested on the seventh day, all but one showed a rise in titer above the control level (0.1 unit or more). The exception showed a rise in titer from 0.02 to 0.05 unit. Of 9 members of Group 3 that were tested on the seventh day, just before the second instillation was administered, only 4 showed a rise in titer from less than 0.10 to 0.10 unit or more. Of the remaining 5 subjects, 4 showed no rise in titer over the control values while one patient showed a rise from 0.05 unit to more than 0.05 and less than

Table I

Antitoxin Titer Following Two Injections of Tetanus Toxoid Alum Precipitated

Comparative Study of Four Commercial Preparations of Toxoid
Titer expressed in units of antitoxin per c.c. of blood serum

Group	Number of Subjects Tested	Days After Second Dose of Toxoid	-0.10	0.10	+0.10 -0.25	0.25	+0.25 -0.50	0.50	+0.50 -1.0	1.0	+1.0 -3.0	3.0	5.0	+5.0 -10.0	10.0
A	10	30 Days (1 Month)					1	3	3	2	1				
B	10								1	1	3	3		1	1
C	10					1		1	1	1	4	1	1		
D	10						2	3	1		3	1			
A	10	90 Days (3 Months)				3	2	2	3						
B	9					1	1	1	1	2	2	1			
C	8					2	2	1*	2		1				
D	9			3**		3		1	2						
A	10	185 Days (6 Months)	1	1	8										
B	9			2	1	2	1	2		1					
C	10		2	1	1^{o}	4^{o}	1		1						
D	9		3^{o}	3		1	2								
A	10	279 Days (9 Months)	2	5	3										
B	8			5		1		1		1					
C	10		1	6	1	1		1							
D	9		5	2		2									
A	9	372 Days (1 Year)	2	6	1										
B	8		2	4		1			1						
C	9		4	2	2		1								
D	9		6	2		1									
A	8	471 Days (15 Months)	7	1											
B	7		3	1			2		1						
C	8		5	1		1		1							
D	8		6	1		1									
A	1	588 Days^{v} (19 Months)	1												
B	4		1	1		1	1								
C	3			1	1		1								
D	2		1			1									
A	8	609-678 Days (20-22 Months)	8												
B	7		3	1		2		1							
C	7		3	2	1		1								
D	8		7		1										

* Each symbol indicates one subject tested 113 days after second dose.
o Each symbol indicates one subject tested 205 days after second dose.
v Only those subjects who on the previous test showed 0.1 unit or more of antitoxin were retested.
+ Indicates more than.
— Indicates less than.

0.10 unit. One member of Group 4 showed a rise in titer to 0.1 unit.

The results of the seventh day bleeding indicate that the group that received the 3 daily instillations of toxoid topagen showed the greatest number of patients with a rise in titer to the protective level of 0.1 unit or more of antitoxin per c.c. of blood serum.

Table II

Antitoxin Titer Following Intranasal Stimulation With Tetanus Toxoid Topagen

Group No. 1 received 2 daily intranasal instillations of toxoid topagen (0.1 c.c. in each nostril)
Group No. 2 received 3 daily intranasal instillations of toxoid topagen (0.1 c.c. in each nostril)
Group No. 3 received 2 weekly intranasal instillations of toxoid topagen (0.1 c.c. in each nostril)
Group No. 4 received 3 weekly intranasal instillations of toxoid topagen (0.1 c.c. in each nostril)
Titer expressed in units of tetanus antitoxin per c.c. of blood serum

Group	Number of Subjects Tested	Days After First Nasal Instillation	-0.10	0.10	+0.10 -0.25	0.25	+0.25 -0.50	0.50	+0.50 -1.0	1.0	+1.0 -3.0	3.0	+3.0 -5.0	5.0	+5.0 -10.0
1	6	5 Days	5	1^{*}											
2	4		4												
3	7		5	2											
4	-		-	-											
1	-	6 Days													
2	3			2^{*}	1										
3	-														
4	-														
1	9	7 Days	2	1	1^{*}		$3^{*\bullet}$	2^{o}							
2	7		1	1	1^{o}	1	1	$1^{\bullet}$	1^{x}						
3	9		3	1	2^{o}		2^{v}		1						
4	1			1											
1	3	9 Days								$1^{\bullet}$	1^{o}	1^{*}			
2	5				1^{*}				2^{x}		$2^{\bullet}$				
3	2					1^{o}				1^{v}					
4	-														
1	9	14 Days					2		1		$3^{*\bullet}$	1^{o}			2^{*}
2	7					1				1	4^{x}				$1^{\bullet}$
3	9						1		1		$4^{\bullet v}$		2		1
4	3										2		1		
1	9	31 Days (1 Month)						1	1		$4^{\bullet o}$		1^{*}		2^{*}
2	10						2^{*}			1	5^{x}		1	$1^{\bullet}$	
3	9							1		1	2^{ov}		2		3
4	3										2	1			
1	9	92 Days (3 Months)					1	1	1		3^{*o}	$1^{\bullet}$	1^{*}	1	
2	9						2^{*}		3		$4^{\bullet}$				
3	9						1		1		2^{ov}	3	1		1
4	3								2		1				
1	7	183 Days (6 Months)					1		1^{*}	1^{o}	$1^{\bullet}$	2^{*}	1		
2	10				2^{*}		1		3^{x}	1	$2^{\bullet}$		1		
3	8				1		1		1^{o}	1^{v}	3			1	
4	3						3								
1	7	276 Days (9 Months)					1		2^{*o}		$4^{*\bullet}$				
2	8				2^{*}		2			2	$2^{\bullet}$				
3	8				1		1		1^{o}	2	2^{v}		1		
4	3				2		1								
1	4	367-401 Days About (1 Year)					1		1		2^{*}				
2	7				1^{*}	1	2		2	1					
3	6				1		1		2		1				
4	3				3										
1	7	403-504 Days About (15 Months)		1	1				2		3				
2	9			1	3				4		1				
3	8			2	1	1		2	2						
4	3				3										

Each numeral represents the number of subjects who showed a given titer at the stated intervals of time. All subjects except those indicated by symbols showed a control titer (before the first instillation in nose) of —0.10 unit of antitoxin.
Each * represents one subject with a control titer of 0.10 unit of antitoxin per c.c. of blood serum.
Each o represents one subject with a control titer of +0.10-0.25 unit of antitoxin per c.c. of blood serum.
Each • represents one subject with a control titer of 0.25 unit of antitoxin per c.c. of blood serum.
Each v represents one subject with a control titer of +0.25-0.50 unit of antitoxin per c.c. of blood serum.
Each x represents one subject with a control titer of 0.50 unit of antitoxin per c.c. of blood serum.
+ Indicates more than. — Indicates less than.

A further rise in titer was demonstrated in those subjects that were tested on the ninth day. The 31 members of the 4 groups were retested on the fourteenth day. By then all the subjects except those of Group 4 (3 weekly instillations) had completed their courses of intranasal stimulation. The 3 members of Group 4 can, however, be classified with those of Group 3. We then find that all the patients showed a remarkable increase in their antitoxin titer, the values ranging from 0.25 unit (one subject) to more than 8.0 and less than 10.0 units per c.c. of blood serum. Most patients had more than 1.0 unit per c.c. Very little difference was noted in the height of the titer in the 3 groups at the end of one month. Thereafter the antitoxin titer dropped in most subjects, especially after 90 days had elapsed. Yet, at the end of 15 months, all the patients that were tested had titers well above those found before intranasal stimulation with toxoid topagen.

Table III

Antitoxin Titers Present Before and 14 Days After a Second "Repeat" Course of Intranasal Instillations of Tetanus Toxoid Topagen

Patient	Control Titer	14 Days After First Instillation (Second Course) Titer
125	+0.10 -0.25	+0.50 -1.0
134	+0.10 -0.25	+1.0 -5.0
120	+0.50 -1.0	+6.0
117	+2.0 -3.0	3.0
130	-0.10	+0.50 -3.0
126	0.50	+3.0 -5.0
115	+0.50 -1.0	+6.0
122	+0.10 -0.25	0.50
110	+0.50 -1.0	+4.0
131	+0.50 -1.0	1.0
135	+0.10 -0.25	+0.50 -1.0
132	+1.0 -1.5	1.5
123	+0.75 -1.0	+3.0

+ Indicates more than.
— Indicates less than.

The results obtained in this series of 31 patients after stimulation through the nasal route compare very favorably with those reported after the injection of a third "repeat" dose of alum toxoid. The major difference between these two methods of raising the antitoxin titer in subjects that had previously received 2 injections of alum toxoid resides in the longer interval of time, 7 to 14 days that must elapse after intranasal stimulation before the titer reaches the 0.1 unit level, as compared to 5 to 7 days needed after the subcutaneous injection of a "repeat" dose. Because the length of this interval of time before protection against tetanus is assured is of paramount importance, it is necessary to administer the toxoid topagen intranasally at regular intervals in advance of an injury.

A second "repeat" course of 3 daily intranasal instillations (about 0.1 c.c. in each nostril) was administered to 13 of the subjects, 433 to 504 days after they had received the first "stimulating dose" by the intranasal route. The antitoxin titers found just before and 14 days after this second course of intranasal treatments was instituted are shown in Table III. The magnitude of the increase in the antitoxin content of the blood of these patients is truly remarkable. To obtain equivalent titers after passive immunization would require the subcutaneous injection of many thousands of units of tetanus antitoxin.

The chief advantages of the intranasal method of stimulating antitoxic immunity against tetanus are its simplicity and lack of reactions. The absence of sore arms and the resulting disability which may follow the repeated injections of tetanus toxoid, alum precipitated, are of particular importance to industrial plants where frequent injuries occur.

Until more data is accumulated to determine the duration of the immunity in a large series of cases, it is best to repeat the course of 3 daily intranasal instillations of toxoid topagen (0.1 c.c. in each nostril) at intervals of 6 to 12 months.

Conclusions

1. A basic immunity against tetanus can be established by the injection of two 1.0 c.c.

doses of alum precipitated toxoid given about 3 months apart.

2. The antitoxin titer that develops after these two injections can be raised to a high level by the nasal instillation of a specially prepared toxoid (toxoid topagen). Three daily instillations of about 0.1 c.c. of toxoid topagen in each nostril will raise the titer to a protective level in 7 to 14 days. This method of intranasal stimulation will produce a stable immunity against tetanus if it is carried out in advance of an injury and is repeated periodically at intervals of 6 to 12 months.

REFERENCE

1. GOLD, HERMAN: Active Immunization Against Tetanus by the Combined Subcutaneous and Intranasal Routes, *Am. J. Surg.*, 48: 359, May, 1940.

ABSTRACT OF DISCUSSION

JOHN H. GIBBON, JR. (Philadelphia): In hearing Dr. Gold give this one presentation, I think we do not get any idea of the amount of work that he has done on this subject. I have had the pleasure of reading his previous papers. His work on the subject of active immunization against tetanus over the past 4 years is an example of careful, patient, painstaking achievement. The questions as to the minimum titer of antitoxin that will protect against infection, the optimum dose of toxoid to be used, the intervals between doses, the time required for immunity to develop, and the duration of the immunity—these and many other questions have been answered by a careful accumulation and analysis of data over a period of years. The latest development which Dr. Gold has reported today gives promise of wide usage in the production of immunity in individuals in civil life and also in the army during war.

Subcutaneous injections at intervals as frequent as 6 months are both costly and unpleasant. The demonstration that a satisfactory immunity against tetanus can be maintained by dropping a solution in the nose once every 6 or 12 months has brought the problem of the active immunization against tetanus into the realm of practical achievement. Dr. Gold did not mention the costliness of the preparation, but it is to be assumed that this will decrease as the method of immunization becomes more widely adopted.

I believe that this work constitutes an important achievement in the field of public health and preventive medicine.

A NEW DISEASE

American physicians must prepare to cope with a new disease. It is becoming generally prevalent and may reach epidemic proportions and severity. It is contagious, and attacks all without discrimination, including those who fill the ranks of the trades and the professions.

By virtue of their training, their ethics, the nature and the demands of their profession, doctors are especially susceptible to the contagion. Until it is better named, the new disease can be called "war fever." The future effectiveness of American medicine and the future status of the American physician will be determined by the extent to which individual physicians are successful in immunizing themselves against the hysteria which is a symptom of and which always accompanies the disease.

The world is at war. One hundred and thirty million Americans are very much a part of this world. It is a wholly new kind of war. In times past, material advantage and territorial gains provided the incentive for wars of aggression. This is a war of ideologic conquest. Material advantages and territorial gains are merely incidental to the larger purpose. It is an all-out warfare, spending lives and treasure on a scale never before contemplated or even imagined by man.

In the present situation there are too many uncertainties to enable either the wisest or the best informed reasonably to predict the extent to which it may be necessary to sacrifice the lives and material resources of this country in order to win this war. It is a known fact—and it should be faced—that we are in the process of mobilizing all of our energies and utilizing all of our resources for the accomplishment of this purpose.

It is almost needless to say that no group will be called upon to make a greater contribution than will be expected from the medical profession. It is needless to say that this contribution will be gladly, cheerfully made by American physicians. American doctors do not expect any special credit for the important service they are rendering or will be called upon to render. Their tradition, their training and experience make this attitude inevitable. Many are already enlisted for the duration. The rest will be ready when called.

However, the greatest national danger lies in the possibility of these doctors becoming victims of the "new disease." On them rests a new and most vital responsibility. It is of the utmost importance that these physicians ever keep in mind that the war itself is one of ideologies; that our first obligation and most difficult task is to preserve the priceless heritage of the American people that has set them over and above and apart from all the other people in the world. It is desirable to consider carrying the "four freedoms" to all the people in the world. However, it is essential that we maintain our own independence and freedom of action, "for what shall it profit a man if he shall gain the whole world and lose his own soul?" It is our task now to "hold fast that which is good."

Tomorrow will come the peace. While we unselfishly and unlimitedly serve, we should make sure that the stifling control of bureaucracy is not permanently established. We should take steps to insure the preservation of the sacred physician and patient relationship, the independence of the physicians, the continued progress of American medicine, and the safeguarding of the public interest.

Medicine's planning and administrative agency in these fields is the National Physicians' Committee for the Extension of Medical Service, Pittsfield Building, Chicago, Ill. It has demonstrated both its reliability and its effectiveness. In these times of increasing stress it should have the allegiance and financial support of every patriotic practicing physician. If your county association has not appointed an official committee to co-operate with N. P. C., it should do so at the next regular meeting.—*Contributed.*

Disruption of Abdominal Wounds

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THE definition of dehiscence is "a splitting or bursting open." Avulsion is "a tearing away." Disruption is "to shatter or to burst asunder." The 3 words are synonymous when describing that unfortunate complication which occurs in about one-half of one per cent of our abdominal operations.

Many of the complications of abdominal surgery give some warning—an elevation of temperature, pain and tenderness as in peritonitis, blanching of the mucous membranes, oxygen hunger, change in pulse rate and alteration of blood pressure, a forewarning of postoperative hemorrhage; pleurodynia, possibly cyanosis and dyspnea in atelectasis; swelling of the extremity, elevation of temperature, and pain in phlebitis.

Wound dehiscence seldom gives any premonitory symptoms. The presence of intestine, usually the small intestine, beneath a surgical dressing, is frequently the first physical finding. It is a complication which is embarrassing to the surgeon and trying to the patient. It is discouraging to a patient, after having weathered a serious operation and having been told that he is doing nicely, when, without pain or other symptom, between the sixth and tenth day following the operation, it becomes the duty of the surgeon to inform the patient that it will be necessary to resuture the wound. Even though this procedure may be carried out usually with local anesthesia, it is disheartening and dangerous.

The object of this paper in reporting 27 cases occurring at the Philadelphia General Hospital during the past 3 years is to impress certain facts concerning the type of patient and the pathology which should prompt the surgeon to anticipate, and therefore be forewarned, in order that such embarrassment may possibly be prevented.

The real causative factor of wound dehiscence may be summarized as one of delayed wound healing. It is not within the province of this paper, because of lack of time, to discuss in detail the process of wound healing. The authors would refer you to the studies of Meleney and Howes[1] for a detailed account of wound healing, with special reference to wound dehiscence. Briefly, wound healing may be summarized as, first, the exudative stage, of 4 or 5 days' duration; and second, the reparative stage, lasting until the wound is completely healed.

During the first stage an exudate occurs. The character and extent of this exudate depend upon several factors, i.e., the extent of injury to the soft tissues, the amount of extravasated blood and lymph, the presence of dust and bacteria in the wound, and the amount and kind of suture material used. Meleney and Howes found that during the first, or exudative, stage the tensile strength of the suture diminishes rapidly and the holding power of the tissues lessens; while in the second stage, the wound rapidly grows in strength as fibroplasia develops. At that time the exudate *should* be absorbed; therefore, an important factor in the prevention of wound disruption is the prevention of any incident which may delay the onset and course of the second or reparative stage.

The amount of exudate depends somewhat upon the manner in which the tissues have been handled by the surgeon at the time of operation—the greater the trauma to the tissues, the more extensive the exudate. The more the exudate, the more apt one is to have delayed healing.

The late Dr. Harry Deaver, the senior author's chief at the Episcopal Hospital when a resident, emphasized the manner of treating the tissues by constantly repeating during an operation "treat the tissues kindly."

The amount of exudate depends also upon the degree of hemostasis—the greater the amount of wound oozing, the greater the amount of exudate.

Many ligations, with large amounts of tissue caught by blunt hemostats and subsequently tied, often result in excess tissue damage and increased serous accumulation in the wound. This increase in exudate serves to prolong unduly the time of first stage of wound healing and makes dehiscence more likely. Failure to control bleed-

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Read before the Section on Surgery of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 2, 1940.

WOUND DEHISCENCE

PATIENT'S NAME	AGE	COLOR	DIAGNOSIS	PROCEDURE	INCISION	DATE OF OPERATION	DATE OF DEHISCENCE	SUTURE MATERIAL	ANAESTHESIA	SERUM PROTEIN	R.B.C.	VIT. C	KAHN	BLOOD SUGAR	BLOOD UREA NITROGEN	CO_2	SERUM CHLORIDE	RESPIRATORY OR G.I. SYSTEMS	RESULT	ICTERUS INDEX-
S. G.	65	W	STRANGULATION OF INTESTINE DUE TO HERNIA	LAPAROTOMY-LEFT INGUINAL HERNIORRHAPHY (70MIN.)	LEFT RECTUS	1-13-40	1-19-40	CATGUT & WIRE	SPINAL NOVOCAINE	A-4.4 G-2.9 7.3	3,800,000	NOT DONE	NEG.	100	16 TO 43	43	480	RALES & DYSPNEA NOTED 1-15-40 BRONCHOPNEUMONIA	DIED 2-4-40	
S. A.	55	B	DUODEAL ULCER BLEEDING	SUBTOTAL GASTRECTOMY GASTRO-JEJUNOSTOMY (160MIN)	RIGHT RECTUS	12-27-39	1-9-40	CATGUT SILKWORM RETENTION	CONTINUOUS SPINAL	A-3.9 G-2.8 6.7	4,300,000	"	"	91	16	—	—	HICCOUGHING 1-2 TO 1-5-40	DIED 1-10-40	
A. G.	25	W	ANEMIA OF UNDETERMINED CAUSE	SPLENECTOMY (75MIN.)	LEFT RECTUS	3-26-38	4-3-38	CATGUT & WIRE	CYCLOPROPANE.	NOT DONE	1,200,000 TO 2,840,000	"	++++	107	18	—	562	DEHISCENCE OCCURRED WHILE ON BED PAN	DIED 4-4-38	
C. W.	62	W	CHOLECYSTITIS PERICHOLECYSTIC ABSCESS	CHOLECYSTOSTOMY (90MIN.) DRAINAGE OF ABSCESS-STAB WOUND	RIGHT RECTUS	11-28-39	12-2-39	CATGUT & WIRE RETENTION	SPINAL NOVOCAINE	"	3,880,000	"	NEG.	94	150	24		ABDOMEN DISTENDED BLADDER "	DIED 12-5-39	
W. H.	32	B	STAB WOUND-FLANK RETROPERITONEAL HEMATOMA	EXPLORATION (75MIN.) DRAINAGE-STAB WOUND	LEFT RECTUS	9-23-39	9-24-39	CATGUT SILKWORM RETENTION	GAS ETHER	"	5,100,000 TO 2,600,000	"	"	—	—	—	—	MARKED DISTENSION OF ABDOMEN	RECOVERED.	
A. A.	60	W	CHOLECYSTITIS CHOLELITHIASIS	CHOLECYSTECTOMY (60MIN.)	RIGHT RECTUS	6-13-39	6-19-39	CATGUT & WIRE	SPINAL NOVOCAINE	A-4.0 G-2.6 6.6		"	"	—	—	—	—	SOME DISTENSION MUCH VOMITING ON 3RD P.O. DAY	"	24
H. F.	36	B	ACUTE CHOLECYSTITIS	PARTIAL CHOLECYSTECTOMY DRAINAGE OF CYSTIC DUCT (90MIN.)	RIGHT SUBCOSTAL	1-13-39	1-21-39	CATGUT SILKWORM RETENTION	CYCLOPROPANE & ETHER	NOT DONE	2,500,000	"	"	70	11	—	—	MUCH COUGHING c̄ POST-OP. PNEUMONIA	"	76
S. P.	28	W	PERFORATED APPENDIX	APPENDECTOMY (65MIN.) DRAINAGE	RIGHT RECTUS	12-13-38	12-17-38	"	SPINAL NOVOCAINE	A-4.0 G-2.3 6.3	4,550,000	"	NOT DONE	—	35	41	515	COUGH DYSPNEA c̄ POST-OP. PNEUMONIA	"	
H. G.	21	W	PERFORATED DUODENAL ULCER	APPENDECTOMY (90MIN.) CLOSURE OF ULCER	"	11-20-38	11-28-38	CATGUT	SPINAL NOVOCAINE	A-3.6 G-2.3 5.9	4,300,000	0.62 MGM.%	NEG.	91	21	—	—	HICCOUGHING BLEEDING WOUND	"	
Z. O.	62	B	CARCINOMA OF STOMACH	SUBTOTAL GASTRECTOMY GASTRO-JEJUNOSTOMY (135MIN.)	"	11-9-38	11-18-38	CATGUT SILKWORM RETENTION	SPINAL NOVOCAINE NUPERCAINE	A-4.2 G-1.5 5.7	4,100,000	NOT DONE	"	91	12	—	—	ELEVATED TEMP. GASTRIC FISTULA	DIED 11-24-38	
J. B.	54	B	ACUTE CHOLECYSTITIS	APPENDECTOMY (90MIN.) CHOLECYSTECTOMY	"	8-22-38	8-31-38	"	CYCLO & ETHER CYLO. & ETHER	NOT DONE	NOT DONE	NOT DONE	—	—	—	—	—	NO NOTE	DIED 8-31-38	
J. M.	50	W	CHRONIC CHOLECYSTITIS	CHOLECYSTECTOMY (60MIN.) APPENDECTOMY	"	4-24-40	5-1-40	"	SPINAL METYCAINE	—	4,500,000	—	—	72	9	—	—	SOME WOUND HEMORRHAGE	RECOVERED.	
F. D.	58	W	PERFORATED APPENDIX	APPENDECTOMY c̄ (35MIN.) DRAINAGE	"	4-15-39	4-21-39	CATGUT & WIRE	CYCLO. & ETHER	—	4,500,000	—	—	—	—	—	—	NO REMARKS	DIED 5-1-39	
R. L.	55	B	TRAUMATIC RUPTURE OF JEJUNUM	CLOSURE OF PERFORATION (30MIN.)	LEFT RECTUS	3-15-40	3-18-40	"	SPINAL NOVOCAINE	A-3.3 G-2.7 6.0	4,240,000	—	NEG.	158	15	—	—	DISTENSION IRRATIONAL ATELECTASIS ?	RECOVERED.	
H. P.	49	W	STOMACH ULCER CALCULOUS CHOLECYSTITIS	CHOLECYSTECTOMY GASTRO-JEJUNOSTOMY LYSIS OF ADHESIONS (90MIN.)	RIGHT RECTUS	10-22-37	10-30-37	"	CYCLO & ETHER	—	3,850,000	—	"	89	18	—	—	COUGH DISTENSION	DIED 11-1-37	
J. C.	49	W	PANCREATIC ABSCESS	LAPAROTOMY (50MIN.) DRAINAGE OF ABSCESS	"	2-1-39	2-5-39	"	SPINAL NOVOCAINE	A-2.9 G-2.1 5.0	3,200,000	—	"	104	30	48	—	DISTENSION VOMITING	RECOVERED.	
W. H.	41	W	DUODENAL ULCER	GASTRO-JEJUNOSTOMY (40MIN.)	"	1-19-40	1-25-40	CATGUT SILKWORM RETENTION	SPINAL METYCAINE	—	5,700,000	—	"	—	—	—	—	GASTRIC DILATATION VOMITING	"	7
T. P.	43	W	ACUTE SUPPURATIVE & CHRONIC ILEO TYPHILITIS	RESECTION OF ASCENDING COLON ILEOCOLOSTOMY (190MIN)	"	2-17-38	2-24-38	CATGUT & WIRE	SPINAL LOCAL & EVIPAL	—	3,450,000	—	—	—	—	—	—	DISTENSION VOMITING RALES IN CHEST	DIED 2-25-38	39
T. R.	48	W	ACUTE CHOLECYSTITIS	APPENDECTOMY-3-7-39 CHOLECYSTOSTOMY 3-7-39 CHOLECYSTECTOMY 3-11-39 (85MIN)	"	3-11-39	3-16-39	"	SPINAL NOVOCAINE	—	—	—	—	—	—	—	—	IRRATIONAL STRAINING.	RECOVERED.	
J. Mc.	56	W	DUODENAL ULCER	GASTRO-ENTEROSTOMY (60MIN)	"	3-24-37	8-30-37	SILK	GAS & ETHER	—	4,120,000	—	NEG.	87	10	—	—	ATELECTASIS COUGH	"	
H. Mc.	58	W	DUODENAL ULCER	PARTIAL GASTRECTOMY GASTRO-ENTEROSTOMY (200MIN)	"	6-22-38	7-1-38	CATGUT & WIRE	CYCLO. & ETHER	A-2.6 G-1.8 4.4	3,120,000	—	"	—	14	58	516	CYANOSIS COUGH VOMITING.	DIED 7-18-38	30
J. F.	45	W	CHOLELITHIASIS CHOLECYSTITIS	CHOLECYSTECTOMY (80MIN.) APPENDECTOMY	"	10-18-39	10-29-39	CATGUT & SILK RETENTION	CONT. SPINAL	—	5,800,000	—	"	70	13	—	—	MUCH COUGHING	RECOVERED.	7
M. K.	51	W	CHOLELITHIASIS CHOLECYSTITIS	CHOLECYSTECTOMY (60MIN.) APPENDECTOMY	"	9-14-39	9-20-39	CATGUT & WIRE	SPINAL & CYCLO.	—	4,000,000	—	"	102	12	—	—	RALES IN CHEST VOMITING	"	18
E. H	34	B	PERFORATED APPENDIX	APPENDECTOMY (50MIN.) DRAINAGE	"	11-23-39	12-1-39	CATGUT	SPINAL NOVOCAINE	—	4,080,000	—	—	170	—	43	575	MUCH COUGH IRRATIONAL STRAINING.	DIED 12-5-39	
C. J.	29	B	SABACUTE APPENDIX	FREEING OF CECUM (60MIN) APPENDECTOMY	"	7-22-39	7-29-39	"	CONT. SPINAL	—	5,100,000	—	—	—	—	—	—	—		
J. H.	56	B	ULCER OF STOMACH ACUTE GENERALIZED PERITONITIS SURGICAL SHOCK (POST RO)	GASTRIC BESECTION (POLYA)	MID LINE	8-30-40	8-7-40	CATGUT SILKWORM STAY	NOVOCAINE ETHER	?	4,460,000 3,700,000 85%	?	NEG.	70	30	61	550	NEGATIVE	DIED 8-9-40	?
S. R.	42	W	SQUAMOUS CELL CARCINOMA OF LARYNX WITH METASTASIS	CARRAROS GASTROSTOMY	"	7-22-40	7-29-40	?	LOCAL NOVOCAINE	?	?	8?	?	87	17	?	?	POST-OP. PULMONARY SUPPURATIVE ABSCESS c̄ BRONCHITIS	DIED 7-30-40	?

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ing results either in increased serous accumulation in the wound, or in a hematoma, which keeps the wound distended, delays healing, and forms a happy culture medium for the growth of bacteria. All of these processes predispose to infection and hasten the digestion of catgut. Nor is it within the province of this paper to discuss more than briefly the pros and cons of the various suture material.

The amount of buried suture material placed in the wound receives the constant attention and discussion of surgeons. The buried suture material is usually catgut. Being a foreign protein body, catgut is absorbed by an exudative reaction. When an excessive amount of catgut is buried in a wound, there is an increased amount of exudate which tends toward the delay of wound healing.

Another factor of interest and of possible significance in respect to catgut has been emphasized by Babcock,[2] Hinton,[3] and Kraisel.[4] These investigators have demonstrated that some patients are allergic to catgut. Catgut is made from sheep intestine, which is foreign protein to the human body. It is probably incompletely cleansed in some instances, and a histamine-like substance has been isolated from its breakdown.

Contrary to the usual belief, the larger sizes of catgut do not necessarily last longer in the tissue, because once the digestive enzymes penetrate the suture, each strand is digested separately and simultaneously. Chromicizing catgut makes it more resistive to digestion, but Kraisel has demonstrated that in the larger size of chromicized catgut the outer layers may be protected, but once digestion penetrates this outside layer the remainder of the suture rapidly disintegrates, whereas in the smaller size the chromicizing extends throughout the entire strand.

Suffice it to say that no matter what type of catgut one uses, the least amount and the smallest size compatible with hemostasis and closure of the wound are most desirable.

During the first 4 or 5 days (the first stage of healing) the tissues are kept in approximation solely by sutures. Wound dehiscence has occurred in wounds which have been sutured by wire, silk, linen and silkworm gut, as well as by catgut. Some operators now use nonabsorbable sutures, especially silk and wire, in clean cases, but the use of such silk or wire by no means insures us against the complication of wound dehiscence.

The use of nonabsorbable suture material is contraindicated in infected wounds. When used in infected wounds, or if used in clean wounds which subsequently become infected, the nonabsorbable suture may act as a foreign body which must slough out before healing of the wound can occur.

At the present time the committee on catgut standards of the American Medical Association has not been able to induce the manufacturers of catgut to agree on any one standard of absorbability, and there are, at present, no tests to determine whether or not catgut resists absorption for a specific time. The usual terms of 10, 20, and 40-day catgut indicate the absorption time of the suture material when imbedded in aseptic muscular tissues, but the rate of absorption varies greatly with the character of the tissues. Thus catgut is absorbed in one-third to one-half the stated time when imbedded in mucous or serous membranes. No. 1 plain catgut loses its tensile strength in 4½ days, and No. 2 plain in 5 days, when imbedded within either mucous or serous tissue.

In suturing the peritoneum, which is a serous membrane, one should realize that catgut is absorbed in one-half or one-third the time that it takes when the same catgut is used in muscular tissue or in fascia.

Dehiscence of a wound is more apt to occur when drainage of the wound has been instituted. The necessity of a drain usually means suppuration or at least indicates a greater amount of anticipated serous exudate. Catgut is absorbed much faster in infected tissue than in aseptic tissue. For this reason a stab incision for drainage rather than drainage through the original incision is preferable. When inadvisable to use a stab wound for drainage, the suture of the incision on either side of the drain should be interrupted, never continuous.

In our series of 27 cases the suture material in 12 cases was catgut and wire, in 10 cases catgut and silkworm gut, in 3 cases catgut solely, in one case silk, and in one case the type of suture material employed was not recorded. The wire and silkworm gut were used as retention sutures. Catgut was used to close the peritoneum. We have not been able to close the peritoneum satisfactorily with wire. In our hands the use of wire to close the peritoneum resulted far too frequently in the peritoneum being torn. We have, therefore, closed the peritoneum with catgut and used the interrupted wire to close the fascia, wire clips or wire being employed to close the skin.

The average time between operation and wound dehiscence is usually between 6 and 10 days postoperatively, although it may occur before the sixth day or subsequent to the tenth day. Cases have been reported on the second or third day, and Sokolov collected 13 cases occurring later than the twelfth day. In our series of 27 cases at the Philadelphia General Hospital, wound dehiscence occurred in one case the same day as the operation. The longest number of days between the operation and wound dehiscence was 13. The average was 6.5 days postoperatively.

Maes, Boyce, and McFetridge[5] reported that 7 of their series of 44 cases occurred after the fifteenth day. Wound dehiscence not infrequently follows the removal of skin sutures or clips.

It was originally believed that dehiscence was a simultaneous process throughout the entire abdominal wall. The recent studies of Caldwell,[6] Freeman,[7] King,[8] and others indicate that dehiscence occurs in steps and is probably completed between the sixth and tenth day. Freeman's explanation of the sequence of events is as follows: The peritoneum is inadequately and incompletely sutured if the patient is straining, because of improper relaxation of the abdominal walls. As a result, there is an opening of the line of sutures. The omentum swells and protrudes through the tissue, layer by layer. This egress of omentum and intestine is favored by increased abdominal pressure due to nausea, vomiting, and delayed wound healing. This procedure of the mechanics of disruption is particularly interesting when one recalls that one of the functions of the omentum is to protect the abdominal cavity from any opening in the peritoneum; that the omentum is practically always found in disrupted wounds; and finally that, at the time of removal of the sutures from the disruption of the wound, the exposed viscera and wound edges are usually covered by fibrous exudate and adhesions, leading to the belief that the process was not acute and that evisceration had occurred previously.

King has pointed out that incisional hernia is also due to a gap or unhealed area in the peritoneum and therefore presents itself through an incompletely healed abdominal wall.

In our 27 cases at the Philadelphia General Hospital, the average age was 46. The youngest case on which the senior author has ever operated for wound dehiscence was at the Woman's College Hospital. Although the cases of dehiscence at that hospital are not recorded in this paper, yet this particular case was one of interest. The baby was *one month old* and had been vomiting for two weeks prior to admission to the hospital. The diagnosis was pyloric stenosis. The child was dehydrated. The pyloric stenosis was relieved, and the peritoneum was closed with O-chromic catgut, the fascia with No. 1 chromic catgut, and the skin with clips. Three days later, following a blood transfusion, there was dehiscence of the wound. The baby was desperately ill. The tissues were then closed with wire sutures through the skin, fascia, muscles, and peritoneum. The baby made an uninterrupted recovery.

Jenkins[9] found that the average age of his reviewed groups of 1294 cases was 44 years. Thirty-seven per cent of the patients were over 50. It must be remembered that during these two decades, namely, the fourth and fifth, the majority of abdominal surgical operations are performed. No age group is really exempt. As in our case, infants may have wound dehiscence.

In our series of 27 cases, wound disruption was more common in men than in women; 25 were men and only 2 were women.

It has been observed by some surgeons that dehiscence is more frequent in the winter and early spring than in the summer and fall. It has been argued that in these seasons, namely, winter and early spring, the lack of vitamin C and general fatigue might exert a direct influence on dehiscence. This observation has not been concurred with by other authors on this subject.

In our series of 27 cases the preliminary diseases included the following: intestinal obstruction, duodenal ulcer, splenectomy for anemia, pericholecystitic abscess, carcinoma of the stomach, calculous cholecystitis, cholecystectomy, terminal ileitis, perforated appendix, and gastric ulcer.

Glenn[10] reported 22 cases, 27 per cent of which were malignancies. In Colp's[11] cases, malignancy was the primary disease in 28 per cent. Starr and Nason[12] reported that 40 per cent of their 15 eviscerations were in patients suffering from malignancies. Jenkins, summarizing 1294 eviscerations, found that 296, or 25 per cent, followed operations for malignancy. It is undoubtedly true that malignancy, with its associated anemia, cachexia, and coincident age, results in delayed wound healing. Other pathology, frequently complicated by dehiscence, i.e., peptic ulcer and surgical operations upon the biliary tract (12 to 15 per cent), the factors of vomiting, hiccoughing, and associated liver pathology, undoubtedly increases the tendency toward dehiscence. Added to this, as noted above, is the patient's poor nutrition and delayed healing.

Multiple operations requiring the excision ot the scar of a previous operation tend to dehiscence more than does a primary incision. Re-operations upon the abdomen usually require a longer period of operating time, necessitate a more liberal incision, and inflict greater trauma because of previous operations, all of which factors bear directly upon the occurrence of dehiscence.

In Fallis'[13] 49 cases of dehiscence, 75 per cent followed operations on patients who had undergone one or more previous abdominal operations.

The rôle that biochemical forces play in wound healing, and hence in dehiscence, is not fully recognized at present, but it is believed that vitamin C and serum protein are important. Whipple,[14] Ravdin,[15] and Thompson[16] have all stressed the retarded healing in patients with diminished serum protein. The absence of wound healing has been demonstrated in animals with scurvy. Many surgical patients have a suboptimal level of vitamin C, many even approaching the scurvy level shortly after operation. It would therefore seem logical that the wounds of these patients in a devitalized state, with anemia, dehydration, vitamin and protein deficiencies, would be more likely to disrupt; therefore, when operation is contemplated on patients of this type, the surgeon should consider the preoperative administration of blood transfusion, intravenous glucose and saline, and vitamin C intravenously. Wolfer and Hoebel[17] suggest that to such patients one gram of cevitamic acid should be administered intravenously for 9 or 10 days (4 or 5 days preoperatively and a like period postoperatively) and then 300 to 500 milligrams daily until the wound is healed. With this dosage they resaturate the tissues with their normal level of cevitamic acid and supply the increased amount apparently necessary for healing.

These factors may be the chief underlying reason for the large coincidence of related malignancy and wound disruption.

Proper selection of anesthesia is most important in operation upon the type of patient who is likely to have wound dehiscence as a complication. Proper relaxation is imperative, facilitating adequate exposure and the ability of handling the viscera with the minimum amount of trauma. Proper relaxation also permits closure of the peritoneum and fascial layers without tension. Inadequate closure of these two structures as part of the solution of the problem of dehiscence has been emphasized by many surgeons (Jenkins, Meleney, Howes, Clute,[18] Caldwell, and Pool[19]). The abdomen should not be opened while the patient is tense and straining. To do so requires more packs and more restraining force by the surgeon's hands to hold the viscera in the abdominal cavity. The surgeon should be equally hesitant to suture the peritoneum and fascia when the patient is not relaxed. The proper closure of these layers without tearing is vitally important.

Spinal anesthesia, especially continuous spinal anesthesia, as advocated by Lemmon,[20] is a useful method of anesthesia, providing the patient's blood pressure and mental picture will permit. Not infrequently local anesthesia must be supplemented by ether, cyclopropane, or some other general anesthetic. The choice of anesthesia must depend upon many factors 'coincident with the individual patient. The final choice is the joint responsibility of the medical anesthetist and the operating surgeon. It must be emphasized that sufficient anesthetic must be given in order to obtain proper relaxation during the operation and while closing the abdomen.

Wound dehiscence has followed every type of incision, even the McBurney incision. Six cases of wound dehiscence have been reported following operation through McBurney incisions. Some surgeons, believing that the underlying disease and the patient's condition are the most important factors, state that the type of incision, as such, is immaterial, but in comparing the ratio of disruption in upper abdominal wounds with lower abdominal incisions, we find that wound dehiscence in the upper abdominal incisions is far more frequent. This, undoubtedly, is because of the fact that the upper abdominal incisions are for operations upon the biliary tract, stomach, duodenum, and pancreas, all organs of digestion, and for pathology which is usually associated with those factors causing delayed wound healing.

Incisions on the lower part of the abdomen are more likely to be for operations upon the female generative organs. Wound dehiscence following gynecologic operations is therefore far less frequent than for operations upon the digestive organs.

Whipple, Sloan,[21] Mayo,[22] Caldwell, Gurd,[23] and others advocate the transverse incision for upper abdominal operations, because the anatomic structure of the posterior rectus sheath above the semilunar line, with most of the fibers running transversely, can be closed without tension; and furthermore, the strain is relieved by the patient's postoperative position, namely, the semi-Fowler position. The failure of the posterior rectus sheath to hold has been almost universally implicated in the dehiscence of upper abdominal incisions.

Singleton,[24] of Galveston, reported 9000 laparotomies in which he found the percentage of disruption 33 times more frequent when the vertical incision was used than when the transverse incision was used.

Postoperative Course

Tremendous strain is put on the healing wound by postoperative complications which cause distention, vomiting, cough, hiccough, and restlessness. Fifty per cent of wound dehiscence is associated with a stormy postoperative convalescence course. Every effort must be made to prevent pulmonary complications, which are especially dangerous relative to wound dehiscence. Postoperative breathing exercises, administration of carbon dioxide and oxygen, and change in posture are all helpful in decreasing pulmonary congestion and atelectasis. Other causes of undue strain placed upon an abdominal incision during the postoperative period are the restlessness and muscular activity of an unruly or delirious patient. For the relief of distention, the Wangensteen apparatus connected with the nasal stomach tube or to a rectal tube has been of inestimable benefit in decreasing the incidence of postoperative nausea, vomiting, and distention and thus acts as a helpful preventive measure against dehiscence.

A proper sedative, notably dilaudid, and proper medication, as prostigmin, are beneficial.

The mortality of wound dehiscence varies from 16 to 75 per cent in a series of cases reviewed. In Jenkins' analysis of 1294 American cases the average mortality was 39 per cent. Sokolov's[25] review of 723 European cases placed their mortality at 35 per cent. There is a variation in mortality percentages, but the approximate mortality is about 35 per cent. In our series of 27 cases the mortality was 48 (plus) per cent.

In our series of cases, the average length of time between dehiscence and death was 5 days.

Conclusions

To reduce to a minimum the incidence of wound dehiscence, the operating surgeon must be "dehiscence conscious." He must be mindful of the type of patient in whom wound dehiscence is most likely to occur and the type of pathology; namely, operations upon the biliary tract and upon the other digestive organs, especially the stomach. He must be mindful of the facts that wound dehiscence is more likely to occur in malignancy of the upper abdominal digestive organs; that these patients are likely to be anemic and cachectic and that wound healing is therefore apt to be delayed; that during operation the tissues must be handled gently with the minimum amount of trauma from sponges, packs, retractors, hemostats, and ligatures; that the anesthetic must be carefully selected; that every minute precaution must be taken to minimize the incidence, postoperatively, of pain, nausea, and vomiting, postoperative distention, and undue restlessness; and lastly, that the intern should be constantly on guard in cases of this type, and that the wound should be inspected between the fourth and twelfth day, at least at 24-hour intervals, in order that dehiscence may be recognized at the earliest possible moment.

Finally, we advocate the more prevalent employment of transverse incisions, especially in surgery on the upper part of the abdomen.

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ABSTRACT OF DISCUSSION

William H. Erb (Philadelphia): Dr. Owen's discussion of wound dehiscence leaves little for one to add. There is one point, however, with which some authors would disagree. Wound disruption does have some premonitory signs, though these frequently may not be recognized. The presence of serosanguineous drainage on the dressing after an interval of several days is a sign of impending disruption. Close examination of the wound will often show a ridge running along the line of incision rather than the normal flat surface. Although at this time disruption cannot be prevented, one can at least guard against the soiling of the abdominal contents and thus prevent peritonitis, which is the usual cause of death in these cases.

Profuse drainage is not the only criterion of impending dehiscence but, as Lahey cautions, all patients with late or persisting postoperative vomiting or any obstructive symptoms should have their operative wounds carefully examined by the surgeon for evidence of disruption.

Causes of disruption, as stated by Dr. Owen, fall in two main groups: (1) the physical condition of the patient; and (2) the technic of closure, which includes the type of suture material.

The practical point in this discussion is how to prevent disruption. In the preparation of the patient, if there is any evidence of hypoproteinemia or vitamin deficiency, these should be corrected before surgery is attempted. Preoperative transfusions or the use of lyophilized serum in cachectic patients, as recommended by Ravdin et al., should be given in all individuals. Cebione can also be given intravenously where vitamin C deficiency is present.

In the technic of operation it is my belief that more importance has been attached to the type of suture material used than is warranted. In most of these cases the suture material can be found in the wound if searched for, but has torn out of the fascia. This is certainly true of wire. I might add here that wire has been found very satisfactory for retention sutures. It is also used routinely on the services of Drs. Eliason and Ferguson for the closure of fascia.

Baldwin and Kennedy report the least number of dehiscences in the literature. In fact, Kennedy states that he never saw any and Baldwin only 3 before final adoption of his present technic. Both emphasize the use of retention sutures, which Baldwin leaves in for at least 14 days. This is rather long for the average case, but certainly for poor-risk individuals it could be tried. In this type of case additional support to the wound by firm adhesive strapping and a properly applied scultetus binder is also indicated.

Dr. Owen mentioned the advantage of continuous spinal anesthesia in affording excellent relaxation when needed, that is, in closure of an incision. We certainly want to support this viewpoint and wish to congratulate Dr. Lemmon on having developed a distinct advance in anesthesia. It certainly is an ideal anesthesia in a great number of cases of abdominal surgery.

A few words might be said about the handling of these cases after they occur. Dr. Eliason recommends the immediate use of morphine and then replacing the contents within the peritoneal cavity and keeping them there by the use of gauze packing. Formal secondary closure is done only after the threat of peritonitis has passed and the patient has recovered from the shock of disruption.

PATIENTS MUST EAT WHEN TAKING SULFANILAMIDE

Patients must eat when they are taking sulfanilamide or one of its chemical relatives, Dr. John J. Shea, of Memphis, warned fellow ear, nose, and throat specialists of the American College of Surgeons.

Taking sulfanilamide on an empty stomach is as bad as taking alcohol on an empty stomach, he explained. Without food, the medicine, like alcohol, can make a person dizzy and even "put him out."

Sulfanilamide, sulfathiazole, and sulfapyridine are medicines, but the surgeons welcomed them because they are saving many patients from operation. Many fewer mastoid operations, for example, have been performed since ear specialists have had these drugs to use for treating discharging ears which formerly required operation in many cases to save the patient's life.

In war surgery, sulfanilamide is destined to play a major rôle in clearing up the dangerous infections that almost always occur in battle wounds.

"The high point in the treatment of wounds today will be sulfanilamide, as the high point in the World War was the Carrel-Dakin solution," Dr. George P. Muller, of Philadelphia, declared in his address as retiring president.

Patients getting sulfanilamide treatment, however, must not only be fed. They must be put to bed and must be seen every day by their doctor, Dr. Shea warned. Blood tests should be made daily to guard against such high concentrations of the drug as might produce symptoms of poisoning. Some patients with discharging ears will have to be operated upon for mastoid infection in spite of sulfanilamide treatment, it was pointed out. Doctors must therefore continue to watch for symptoms of mastoid infection even if the patient's fever and earache disappear under the treatment.—*Science News Letter,* May 17, 1941.

CONGRESS NEEDS RELAXATION

In a recent interview, Dr. George W. Calver, congressional physician, declared that members of Congress suffer from "overwork and overstrain." He pointed out that the lawmakers had been in almost continuous session for nearly 3 years and were greatly in need of relaxation. He recommended walking and "9 holes of golf" as an antidote to national defense, convoys, taxes, and other legislative worries.

Dr. Calver reported that in the first 4 months of this year he had received nearly 4000 calls from members of Congress and capitol employees. This is about 60 per cent more than in the same period of time in 1940. He was quoted as saying that the public should be interested in seeing that senators and representatives get some time to relax "because if they can get away for awhile, they will do a better job."

Dr. Calver said that the average mortality age of 66.1 years for members of Congress had remained nearly constant for 10 years. Six senators and 28 representatives have died in the past 3 years. This death rate, according to Dr. Calver, is about one-ninth of the average public rate.—*Medical Annals of the District of Columbia.*

TENSION PNEUMOTHORAX

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SPONTANEOUS pneumothorax in children is relatively uncommon. In 1932 Coccheri and Rossi[1] reviewed the available literature on this condition in children up to 12 years of age, and, including 16 cases observed by them, found 300 cases. None of these were newborn infants. Stein[2] in 1930 reported 4 cases in newborn infants and added a case of his own. Glaser and Landau[3] in 1935 were able to find the records of 12 other cases occurring in newborn infants, to which they added a case of their own. Since then sporadic cases have been reported occurring in both newborn infants and older children.

In spite of the seeming infrequency of this condition, it is readily identified and diagnosed. This may be by chance x-ray finding, particularly in the newborn infant, or when dyspnea and cyanosis with the classic signs of tympany, distant or absent breath sounds, and mediastinal and cardiac shift occur.

Occasionally, small clear-cut areas of pneumothorax are found when the chest is x-rayed. These are not significant clinically, cause no respiratory distress, are usually not found on physical examination, and will disappear in several weeks or months without instituted treatment. This simple type of spontaneous pneumothorax is not to be confused with tension pneumothorax.

Tension or valvular pneumothorax occurs when a bronchus communicates with the pleural cavity and results in an accumulation of air with an increasing pressure. According to Zavod,[4] this valve may be in the form of a flap, a slit, or a purse-string arrangement. When an adhesion incompletely tears at the point of insertion into the pulmonary parenchyma, a flap valve is most likely. A slit valve may result from a puncture wound when a thoracentesis needle is introduced to aspirate pleural fluid. Both factors seem likely in the case to be presented. The purse-string valve is an ulcerative opening from the outer wall of a peripheral cavity into the pleural space, which is likely to occur in caseous tuberculosis.

As the air enters the pleural space, the intrapleural pressure rises, and when it exceeds atmospheric pressure, causes collapse of the adjacent lung. As the lung collapses, the opening into the pleural space closes, but if the opening is too large or if too close to a larger bronchus, air will continue to enter the pleural cavity with respiratory activity and will increase the area of pneumothorax. Likewise, the patient's dyspnea favors greater inspiratory effort and forces more air into the pleural space, further increasing the size and tension of the pneumothorax. As the mediastinum and heart are displaced and encroach upon the opposite lung field, respiratory and circulatory embarrassment become marked and the aspiration of pleural air becomes necessary and even life-saving. Single repeated aspirations are often inadequate. Continuous aspiration is then necessary and may be accomplished by inserting a cannula into the pleural space, maintaining its position, and by means of a 3-way stopcock a closed system is maintained which allows the controlled escape of air or manometric readings. In order to keep the system closed and to prevent outside air from entering the pleural cavity, the pleural air is aspirated by syringe or collected by displacing water.

It has been noted that the air in the pleural space often acts as an irritant and a pleurisy with effusion results. Recovery frequently follows this event as the visceral pleura adheres and seals the pulmonary opening. Encouraged by this, Spengler in 1901 used 0.5 per cent solution of silver nitrate in the pleural cavity to initiate a chemical pleuritis. In 1919 he advised the use of 30 c.c. of 30 per cent dextrose intrapleurally. Other chemical agents have been used. Hennell and Steinberg,[5] reviewing this method of treatment, outline their experience with iodized oil intrapleurally with successful results in 5 cases.

Whereas 80 to 90 per cent of cases of pneumothorax in adults can be traced to tuberculous lesions, the great majority of cases in children are nontuberculous in origin. Among newborn infants the outstanding cause is trauma at birth.

Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

McEnery and Brennemann[6] identified the cause in 84 children as follows: pneumonia 36 per cent, gangrene of the lung 13 per cent, pertussis 5 per cent, lung abscess 4 per cent, congenital defects 5 per cent, and other causes including operative procedures 16 per cent.

Case Report

Francis D., a 5-year-old boy, was admitted to the medical ward of St. Christopher's Hospital for Children on Jan. 12, 1939. He was well until Jan. 2, 1939, when fever was noted at home. A diagnosis of pneumonia was made and he was treated by his family physician. On Jan. 12 he became quite toxic and hospitalization was advised.

He had always been in good health. There were no preceding diseases. He was a normal full-term infant when delivered, and his birth weight was 8 pounds. He was breast-fed until one year of age and his development was good. The family history was negative.

On admission he was quite toxic, had marked dyspnea, and some cyanosis. Important physical findings were limited to his chest which showed dulness and distant breath sounds over the lower lobe of the left lung with bronchial breath sounds over the upper part of this lung. There was no cardiac displacement. The heart sounds were weak and rapid, but no murmurs were heard. The right side of the chest was normal. His temperature was 102.5 F., pulse 140, and respirations 52. The blood count showed 31,800 white cells with 96 per cent polymorphonuclears. The urine was normal. A diagnosis was made of left lower lobe pneumonia with empyema.

X-ray examination on Jan. 12 (Fig. 1) showed clouding of the left side of the chest confined to the left lower lobe with some pleural thickening over the entire left side of the chest but with little appreciable fluid. The heart was not displaced.

On Jan. 14 he became quite dyspneic and the heart seemed displaced to the right. Dulness over the left side of the chest was more marked. Thoracentesis was done and 120 c.c. of rather thick pus was removed from the left pleural cavity. On the following 4 days 150 c.c., 140 c.c., 110 c.c., and 160 c.c. of pus was aspirated. He was acutely ill and was supported by repeated small transfusions, maintained in an oxygen tent, and given sulfanilamide. An acute hemolytic reaction occurred with sulfanilamide and medication was stopped. Culture of the pus from the left side of the chest showed Type I pneumococcus.

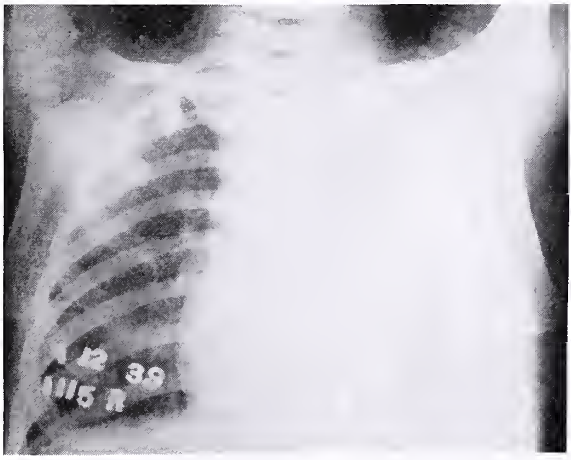

Fig. 1. X-ray taken Jan. 12, 1939, showing the pneumonia of the left lung and the general left pleural thickening. There is little cardiac displacement.

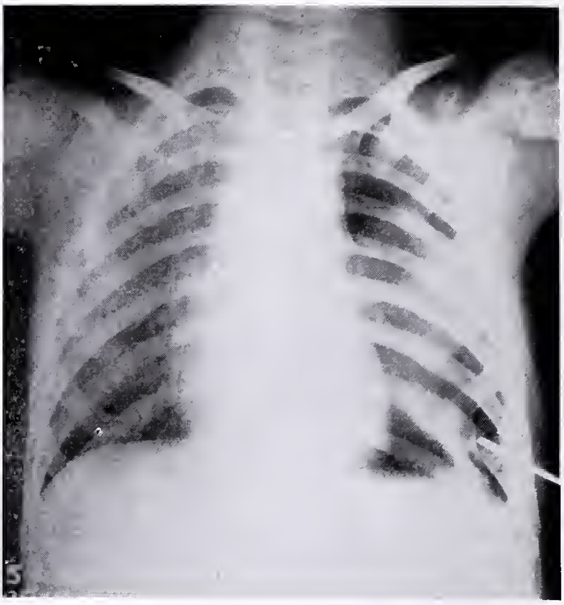

Fig. 2. X-ray taken May 1, 1939, shows 50 per cent expansion of left lung and marked decrease in size of pneumothorax. The metal cannula is seen in place and points to an adhesion. The heart and mediastinum are in place.

On Jan. 18 his condition was improved. A roentgenogram taken that day showed less clouding of the left side of the chest and the lung field on that side seemed clearer. Aspirations were repeated on Jan. 22 and on Jan. 26, yielding 145 c.c. and 240 c.c. of thick creamy pus. His temperature dropped from 101-102 to 99 F.

On Jan. 28 the temperature rose to 103.4 and stayed up for the next 2 days. He was transferred to the surgical service, and on Jan. 31 an intercostal drainage was done. His postoperative condition was good and the temperature dropped to normal. The wound drainage was profuse. On Feb. 6 the temperature rose to 103 and on the following day a rib resection was done. For the next 22 days until Feb. 28 he showed a daily temperature of 101 to 102. Chest examination revealed signs of a right bronchopneumonia and this was verified by x-rays taken on Feb. 13 and Feb. 20. These films showed some expansion of the left lung and less pleural thickening.

The temperature became normal on Feb. 28. There was a gradual decrease in left pleural drainage and on Mar. 10 the wound was dry and completely healed. The child's condition was good and a final x-ray was ordered before discharge. This x-ray taken on Mar. 18 showed a large pneumothorax of the left side of the chest with collapse of the left lung to 15 per cent of its normal size and an adhesion holding out the lung and preventing its complete collapse. In spite of this marked x-ray finding, the child had no suggestive symptoms and appeared perfectly well. Physical checkup at this time showed tympany over the entire upper left portion of the chest, distant breath sounds, and displacement of the heart and trachea to the right.

Conservative watching was decided upon with the feeling that the bronchopleural fistula was small enough

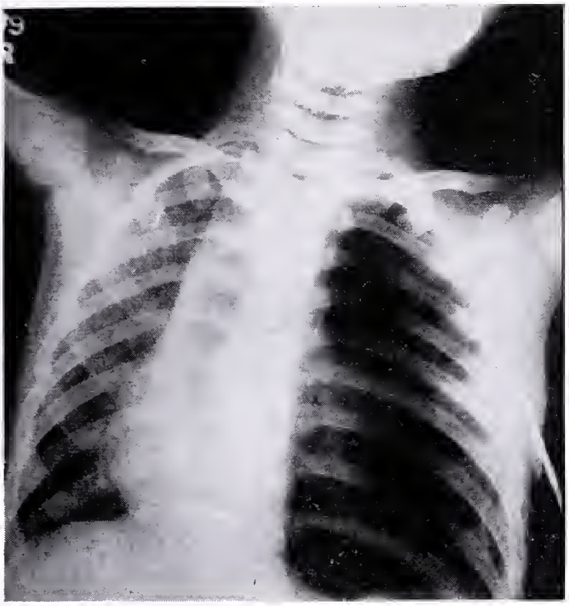

Fig. 3. X-ray taken May 11, 1939, shows cannula out of place and the marked return of the pneumothorax and cardiac displacement. The cannula had already been in place about 2 weeks.

to close spontaneously. On Mar. 28 bronchoscopic examination was done and revealed normal endoscopic findings. The child's condition remained good. On Apr. 1 a chest x-ray showed the same large area of pneumothorax with mediastinal displacement. On Apr. 7, 150 c.c. of air was aspirated from the left pleural cavity and, on Apr. 8, 500 c.c. was removed. On Apr. 10 a chest x-ray showed no change in the size of the pneumothorax, in spite of these aspirations. The child's condition remained good and there was no change in the next 2 weeks. On Apr. 24 there was marked cardiac and mediastinal displacement to the right and scattered fine and coarse râles were heard over the right side of the chest. An x-ray on Apr. 27 showed an increase in the amount of pneumothorax with herniation of the mediastinum into the right lung field. At this point signs of respiratory distress were present with complaint of chest pain, dyspnea, pallor, and small rapid pulse.

It was decided to introduce an indwelling cannula into the left pleural cavity to offset the increasing tension pneumothorax. A 3-way stopcock maintained a closed system and allowed connection between the cannula, a manometer, and an outlet for the escaping air. With the cannula continuously in place the intrapleural air could be removed at will by adjusting the stopcock as often as was indicated by checking on the intrapleural pressure. At first the air was removed by allowing it to displace water. As the initial high intrapleural pressure dissipated itself, the air was aspirated by attaching a syringe to the outlet tube at intervals varying from one-half to every 2 hours. This could be done without disturbing the patient. Daily x-rays showed splendid re-expansion of the left lung with the return of the heart and mediastinum to their normal positions. On May 1 an x-ray of the chest (Fig. 2) showed 50 per cent expansion of the left lung and marked decrease in the extent of the pneumothorax. Encouraged by this, the cannula was withdrawn, but the x-ray the following day, May 2, again showed the massive pneumothorax and marked mediastinal shift to the right.

It was felt that the fistula must be connected to a fairly large bronchus and that only by continued and prolonged expansion and possibly with the occurrence of a pleuritis could the left lung be expanded and the opening closed. An attempt was made to outline the bronchopleural fistula by tracheal instillation of lipiodol, but this was unsuccessful. The cannula was again secured in place and connected by tube under water, the tube being below the level of the patient's chest to aid the escape of intrapleural air. Re-x-ray on May 6 showed the pneumothorax to be small and the left lung expansion good. On the same day a small amount of serous fluid was aspirated from the left pleural space indicating the beginning of a pleuritis. On May 11 an x-ray of the chest (Fig. 3) showed the cannula out of place, being lodged in the subcutaneous tissue, and the pneumothorax area was again large. Re-x-ray on May 13 showed the cannula in place and an appreciable reduction in the size of the pneumothorax. On May 16 an x-ray showed evidence of the irritative pleuritis over the left part of the chest with a decrease in size of the pneumothorax. The cannula was withdrawn, after having been in place for about a month, and an x-ray taken on May 31 showed no increase in the size of the pneumothorax.

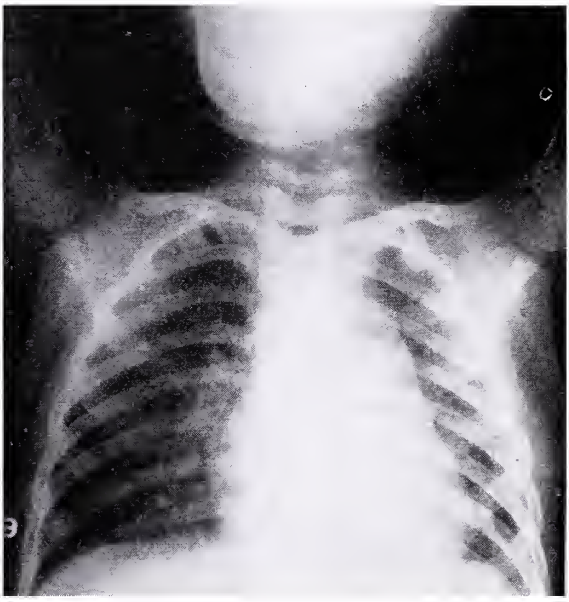

Fig. 4. X-ray taken June 14, 1939, shows only slight pleural thickening over left side of the chest and no evidence of fluid. Both lungs are clear. There is practically no pneumothorax. There is no displacement of heart or mediastinum.

Physical examination on June 2 showed good transmission of breath sounds throughout the left lung field, although slightly subdued; the percussion note was fairly resonant, and the heart was not displaced. Re-x-ray on June 5, the cannula still withdrawn, showed clearing of the left lung with no increase in the area of pneumothorax and no mediastinal displacement. On June 20 the child's condition remained good and an x-ray showed only a small area of pneumothorax and further expansion of the left lung. On July 14 a final chest x-ray (Fig. 4) showed only slight pleural thickening over the left side of the chest, there was no evidence of fluid, both lung fields were clear, and the heart and mediastinum were in normal position. The patient was discharged, recovered, on July 24, 1939. At this date, Sept. 27, 1940, he is well and has had no complaint since the date of discharge.

Summary

1. Tension pneumothorax is relatively rare in children; some 320 cases have been reported.

2. The etiology is usually trauma or lung infection. Pulmonary tuberculosis is an uncommon cause in children. Pneumonia with its complications is the commonest cause.

3. A case is reported in detail outlining the method of treatment. Continued aspiration with an intrapleural cannula in place and the occurrence of an irritative pleuritis were followed by recovery.

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ABSTRACT OF DISCUSSION

Benjamin F. Diseroad (Philadelphia): In a child or adult having pus in the chest cavity following a pneumonic infection, is it not better to resect a rib at once and provide wider drainage than possibly can be obtained from a small tube between the ribs? I understand rib resection was finally done even though the presence of pus was diagnosed early. It is my opinion, based on experience and observation, that early resection results in an earlier cure with less complications. Nevertheless, I want to congratulate Dr. Grossman on his successful treatment of this case, and do not in any wise intend that this should be a criticism from any but a constructive angle.

Dr. Grossman: The doctor's point is well taken. Our purpose in presenting this case was to emphasize an unusual complication during the course of a pneumonia and empyema.

Harry E. Knox (Philadelphia): Empyema discussion is as old as the hills. When one reads the literature, he finds that every surgeon has his own particular treatment. Our method of treating empyema is the same as was outlined and shall continue to be so because of the experience that we have accumulated from a tremendous number of cases, not only in this institution but in 2 or 3 other large institutions in Philadelphia, particularly the Philadelphia Hospital for Contagious Diseases, where empyema is a common occurrence.

Why do we not do these things early and well? That is a good question. If we did, we would find that our mortality rate would promptly rise anywhere from 10 to 25 per cent, whereas if we follow the procedure outlined by Dr. Grossman, the mortality will be zero—at least that has been our experience.

What is the reason for a bronchogenic fistula? The answer is that surgeons as a whole are prone to leave the drainage in too long. We used a long rubber tube, soft in character and hard in consistency. The tube had apparently produced a pressure necrosis, in this instance, against the pleural lining of the lung, and thereby caused a bronchogenic fistula.

Hereafter, as soon as the rib resection has been established, the rubber tube will be left in place 3 or 4 days and then be permanently removed; free drainage will be provided through the opening left by the rib resection. We are certain that within 10 to 20 days, or within 10 days to 2 weeks, we will be able to decompress all the enclosed purulent material.

In answer to the question as to why rib resection was not done first, may I say that it was done primarily to save life. By doing a simple procedure and getting continuous decompression early but slowly while a child is still toxic and febrile, we feel from our experience that we have saved life rather than taken it.

AUTHORIZATION OF PHYSICAL EXAMINATIONS, TREATMENTS, OPERATIONS, AND AUTOPSIES

Ordinarily an operation must be performed strictly within the limits of the authority that has been given. Authority may be given, however, for the operating physician to use his own judgment, and this usually should be demanded by the physician.

Written Consent Preferred

Consent by word of mouth to an operation or an autopsy is probably the most common form of consent. . . . Oral consent is, however, open to misunderstanding and may be difficult of proof. Whenever it is to be relied on, consent should be given in unequivocal terms, in the presence of one or more disinterested witnesses. Written consent to an operation or to an autopsy is by far the safest, for it permits a clear record of the nature and extent of the operation or autopsy that is authorized. If the patient is a minor, authority for an operation must come from his parent or guardian.—*Board of Trustees, The Medical Society of the State of Pennsylvania.*

Frontal Lobe Abscess of Otitic Origin

F. HAROLD KRAUSS, M.D.
Philadelphia, Pa.

Case Report

Anna McBRIDE, aged 8 months, was admitted to St. Christopher's Hospital on Feb. 11, 1940.

Chief Complaint: Persistent vomiting.

Past History: Normal delivery. Birth weight, 8½ pounds. Has had no diseases. No history of ear trouble, but mother says child was "born with a cold."

Present History: She was in good health until 2 weeks ago when she began to vomit after each feeding. The time varied from a few seconds to a few minutes. The child was placed on goat's milk and various formulas by the family doctor, but still continued to vomit with a great deal of force. The stools have been of good consistency, yellow in color. There is no cough, no running of the nose, and no ear pulling. The child has been listless, has no pep, and scratches her head a great deal. She has had no convulsions. She always lies in one position with the eyes half open, and cries when touched or picked up. Since this morning she holds her head rigid. Four days ago a blister-like lesion containing pus appeared on the right lateral thigh.

Physical Examination: White female infant with marked emaciation and dehydration, opisthotonos, and irritable, anguished cry. No cyanosis, dyspnea, or rash.

Head: Anterior fontanelle bulging. Eyes, ears, nose, and throat negative. No abnormalities of heart, chest, or abdomen. Positive Kernig and Brudzinski signs, and increased patellar reflex.

A provisional diagnosis of tuberculous meningitis was made. A spinal tap showed the spinal fluid cloudy but not under pressure. The white cell count was 2200. Sulfapyridine was started and 10 c.c. of polyvalent antimeningococcic serum was introduced into the cisterna. On the second day the count was 8000 cells, 75 per cent polymorphonuclears, and 25 per cent lymphocytes. The cultures were returned negative until the fourth day when Staphylococcus albus was reported. Sulfathiazole was immediately started, but studies for tuberculosis were reported as follows: negative for acid-fast bacillus, negative for pellicle, tryptophan test positive, Levinson test negative, and guinea pig inoculation negative.

After the fourth day the spinal fluid was consistently positive for Staphylococcus albus. The cell count, however, began to fall from a high 8200 on the fourth day to 600 on the fourteenth day and the child seemed improved. A sudden rise in temperature stimulated a search for a possible focus and x-rays of the sinuses and mastoids were made and reported as follows:

X-rays of Sinuses: Anterior posterior view of the frontal region of the skull reveals practically no sinus development and it is difficult to give an accurate opinion of the other sinuses. There is no bony abnormality of the cranial vault and x-rays of the long bones are normal. An x-ray of the mastoids taken on Feb. 28 showed that the right mastoid is infantile in type. The predominating cells are very small and the only area that is pneumatized is above and posterior to the antrum. These cells are definitely cloudy. Whether this is indicative of present disease or whether it is sclerosis on the basis of previous infection, we cannot state. We would favor the presence of acute disease because of the type of clouding which is present. The lateral sinus is not visualized. The left mastoid is essentially the same, showing dense clouding in the region of the posterior canal wall and extending into the tip.

The next day a bilateral mastoidectomy was done through the regular postauricular incision. On the right side the cortex was extremely thin and the first stroke of the chisel uncovered a large cavity filled with dry, brittle, trabeculated bone which broke down easily with no bleeding. The plate of the middle fossa was necrotic, but the dura looked normal. The lateral sinus was uncovered, but was not abnormal; a large emissary vein overlying the sinus bled freely. There was a small amount of granulation tissue in the antrum. A culture taken at the operation showed Staphylococcus albus. The left mastoid was almost identical.

The child lived 2 days and died on the third of March, 3 weeks after admission. An autopsy was obtained and reported as follows:

The superficial vessels were dilated and engorged with blood. Careful observation revealed the presence of a very small amount of exudate on the surface of the brain, especially anterior to the medulla and pons and in the optic chiasm. The right temporal lobe in its most anterior and dependent portion was discolored and brown-tinged. On section, the brain felt softer. The ventricles were distended and a large amount of hazy fluid escaped under pressure. The white matter throughout the brain seemed softer than normal and in many places was gelatinous. A small abscess was found in the right frontal lobe; the pus was green in color. A section through the brown discolored temporal lobe showed the white matter to be gelatinous. A culture from the brain exudate and from the brain abscess showed Staphylococcus albus.

Courville and Nielson, in 1935, reporting on a survey of 10,000 necropsies in the Los Angeles County General Hospital, found that 167 or 1.67 per cent of all deaths were due to intracranial complications of otitis media. Of these, 51 per cent were extradural abscesses, 17 per cent were leptomeningitis, 22 per cent were sinus phlebitis,

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1 per cent were subdural abscesses, and 8 per cent were brain abscesses.

This shows that these cases are not rare, but the most interesting, single factor about the author's case is the complete absence of any history of otitis media and the practically normal appearance of the eardrum heads.

I feel quite certain that the meningitis and brain abscess in this case were of otitic origin. The mastoid processes were entirely destroyed from a suppuration, probably arrested by chemotherapy by the time of operation. Whether or not earlier drainage of the focus of infection would have affected the outcome of this case is difficult to say, but if we bear in mind that 90 per cent of all intracranial suppurations are traceable to otitic infections, all ears, whether they have normal drums or not, should be considered guilty unless proved otherwise.

ABSTRACT OF DISCUSSION

Alfred Hand (Philadelphia): While the majority of cerebral abscesses in children are secondary to otitis or paranasal sinus infection, there is one group of pediatric patients in whom the abscess may arise from infection in any part of the body—patients with congenital cardiac lesions having septal defects.

I saw my first case of this kind not many years ago, and later, while looking through some of the early Transactions of the American Pediatric Society, I found a report by Dr. George N. Acker of such a case, Jacobi and Packard in the discussion reporting similar cases. The only other reference to this which I have found in the literature is in Sutherland's article on the heart in the volume on *Diseases of Children,* edited by Garrod, Batten, Thursfield, and Paterson. Sutherland states that it "is an old-standing clinical observation" that patients with congenital cardiac lesions often died with signs of cerebral abscess or embolism, the emboli or the micro-organisms not being held up in the pulmonary circulation but passing directly through the septal defect from the right to the left side of the heart and to the brain through the arteries. This seems to be an interesting point for pediatricians to bear in mind.

PRODUCTS ACCEPTED BY COUNCIL ON PHARMACY AND CHEMISTRY

Among others, as of June 16, 1941, the following products have been accepted by the Council on Pharmacy and Chemistry since May 1, 1941:

Armour Laboratories
  Suprarenalin Solution 1:1000, 5 c.c. vial (for hypodermic use).

Cutter Laboratories, Inc.
  Sobisminol Solution-Cutter, 50 c.c. bottle.

Drug Products Co., Inc.
  Pulvoids Thiamine Hydrochloride, 1 mg. and in varying strengths.

  Hyposols Solution of Thiamine Hydrochloride Crystals in ampules.

Endo Products, Inc.
  Ampules Epinephrine in Oil 1:500-Endo, 1 c.c.
  Tablets Nicotinic Acid-Endo, 50 mg., Scored.
  Tablets Nicotinic Acid-Endo, 100 mg., Scored.

Lederle Laboratories
  Tablets Aminophyllin-Lederle, 0.2 Gm. (3 grains).

Eli Lilly & Company
  Sulfathiazole-Lilly
    Tablets Sulfathiazole-Lilly, 0.25 Gm. (3¼ grains).
    Tablets Sulfathiazole-Lilly, 0.5 Gm. (7½ grains).

Frederick Stearns & Co.
  Ascorbic Acid Tablets-Stearns, 50 mg.
  Ascorbic Acid Tablets-Stearns, 100 mg.

Upjohn Company
  Typhoid Vaccine-Upjohn, six 2½ c.c. vials package.
  Tablets Sulfapyridine-Upjohn, 0.5 Gm. (7.7 grains).
  Tablets Sulfathiazole-Upjohn, 0.5 Gm. (7.7 grains).

Winthrop Chemical Co., Inc.
  Pontocaine Base Eye Ointment.

INTERN HEALTH

Much of the report of the Council on Medical Education and Hospitals at the recent meeting of the A. M. A. dwelt on the subject of intern health. The findings and recommendations of the council deserve emphasis.

In its survey the council found that among 61 interns, who during the period 1937, 1938, and 1939 were compelled to discontinue work because of illness, tuberculosis was the cause in 36 (59 per cent).

In 1940 the council sent questionnaires to more than 5000 medical graduates of 1937 regarding health during internship. Over half the questionnaires were filled out and returned. From the replies and the records in the A. M. A. files of 34 fatalities known to have occurred among the 1937 graduates, it was determined that 3 diseases were rather outstanding among the great variety of severe and minor illnesses experienced. There had been 142 cases of appendicitis, 103 cases of pneumonia, and 48 cases of tuberculosis.

Appendicitis is not preventable, but presumably it is promptly recognized and properly treated when it appears among interns. The incidence of pneumonia, which may or may not follow an acute respiratory infection, seems high. The question arises whether acute respiratory infections receive due consideration in the intern population and whether hospitals in general provide the proper mechanism for care of the common cold. The early detection of tuberculosis is essential among interns as well as elsewhere. The recommendation of the council that chest radiographs of all interns be taken at intervals of 3 to 6 months is worthy of adoption. Even more important is the desirability of furnishing healthful recreational facilities for interns in order to prevent the development of this infection.

By the time the medical student has reached his internship year he has had several years of close application to his studies. All have not been able to spend summer vacations in the great outdoors, and they should receive more than the casual medical supervision given them in many hospitals.—*Minnesota Medicine.*

Observations on Eyegrounds of the Newborn

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NATURALLY this is not the first time that any study of the eyegrounds of the newborn has been made. Soon after the invention of the ophthalmoscope, observers began to look into the eyes of babies. A great deal of difficulty must have been encountered before the availability of the self-luminous ophthalmoscope, for even with our electric equipment examination is frequently not without difficulty. All of the recent writers start these articles by referring to the monograph on birth injuries by Ehrenfest, published in 1922. Since then there have been quite a few articles on the subject. Among those in English are articles by Jacobs, Sykes, Eades, and a very well-illustrated article by Frances Richman. If only one or two additional points of knowledge can be added to the subject, it will be worth while to go into it again at this time.

The present study includes examination of the eyes of 3381 newborn infants during the first 72 hours of life. The nursery was visited 4 times each week and the babies born after the previous visit were examined each time. The patients were taken consecutively as delivered in the Abington Memorial Hospital. Included is a group of 466 private patients of Dr. Roland D. Porter. The others are the ward patients of that hospital. Prior to my visit to the nursery each patient had a drop of ½ per cent atropine instilled in each eye. Atropine was used because after the preliminary study of 50 patients it was found that certain pupils were not dilated satisfactorily for fundus examination when homatropine was used. No ill effects have been observed from the use of the atropine. For the examination, the patient is carefully wrapped in a blanket and held by the nurse. The examiner stands at the head of the patient and opens the lids by pushing rather than pulling them apart, thus preventing eversion of the lids. Irrigating solution must frequently be used to remove mucus and débris from the cornea.

No attempt has been made to enumerate the number of patients with swollen lids or subconjunctival hemorrhages, as these have always been quite obvious to the obstetrician and pediatrician. The commonest finding noted was persistence of strands of fetal pupillary membrane. This is so common that tabulation was abandoned early in the study. Piersol in his *Anatomy* called it the most common congenital anomaly in the body. Dr. Alfred Cowan has pointed it out on numerous occasions from his slit lamp observations. Other less common abnormalities will simply be enumerated: microphthalmus, dermoid of limbus, pre-retinal artery, and posterior synechia (one each). Ectropion uveae, deformity of the nerve head (conus below or partial coloboma), and persistence of a portion of the hyaloid artery occurred, each 3 times. There was one with posterior polar cataract, one with nuclear cataract in the right eye, and one with cataracts in both eyes. This last patient is one of a family in which congenital cataracts have occurred frequently in 4 generations. One patient had a ring-like opacity of the cornea with the remains of the pupillary membrane adherent to it at about 10 or 12 places at the time of birth. The adhesions have since torn off, but a ring-like opacity of the posterior layers of the cornea is still present. The patient is now 8 years old. There were 7 patients with nystagmus. One patient had marked hyphemia, which absorbed promptly. One patient had unilateral proptosis which receded in the course of a few weeks. Facial paralysis was noted only 3 times. Definitely steamy cornea was noted in 22 patients; all of these cleared up within a short time, and none of them revealed rupture in Descemet's membrane, as sometimes results from birth injury.

Richman goes into some detail describing the normal fundi. She notes 6 types of disks and 4 general types of general fundi. I have made no attempt to make such a classification, but several points are worthy of note. Newborn and young infants have less pigmentation in their fundi than adults. The maculae are less easily differentiated and can be observed only by their posi-

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Read before the Section on Eye, Ear, Nose, and Throat Diseases of The Medical Society of the State of Pennsylvania, Oct. 1, 1940.

tion in the fundus. The disks show a rather bluish pallor which could easily be mistaken for optic atrophy. Ida Mann attributes this appearance to the fact that the myelin sheaths have not as yet reached the lamina cribrosa. It is my feeling that, in addition, there is also not as yet the full development of the capillarity of the nerve head. All the newborns are hyperopes, their fundi being very easily visible with a plus 4 to plus 2 D lens in the ophthalmoscope.

The most frequent pathologic lesion noted was hemorrhage into the retina. Of the 3381 patients examined, 605 revealed hemorrhage of varying degree in either one or both retinas. An attempt is made to correlate the findings with some of the facts associated with the delivery of the patient, and with pathologic conditions existent in the mother or child.

Various authors have previously reported retinal hemorrhages of the newborn in from 10 to 34 per cent of the cases. This wide variation is apparently due to the time of the examination and the selection of the patients. The hemorrhages absorb rapidly and even patients having many hemorrhages are usually free from them by the time they are ready to be discharged from the hospital at the end of two weeks. Some of the physicians reporting a higher percentage state in their papers that only babies who were subjected to a difficult delivery were examined. Richman in her paper examined 531 patients between 1 and 8 days of age and found hemorrhages in 12.2 per cent of the entire group. Her patients with primiparous mothers had hemorrhages in 17.5 per cent, and the ones with multiparous mothers in 9.2 per cent. Of the primiparas delivered by forceps, she found hemorrhages in 19.6 per cent, while the primiparas delivered normally revealed only 13.8 per cent. She found that the duration of labor had no effect on the number of hemorrhages.

Table I

Retinal Hemorrhages in Relation to Type of Delivery—Ward Patients

Type	*No. of Cases*	*Hemorrhages*	*Per Cent*
NP	562	115	20.4
NM	1675	265	15.8
LFP	363	84	23.2
LFM	108	25	23.1
M&HFP	38	18	47.3
M&HFM	13	6	46.1
BR	92	7	7.6
PVP	2	2	...
PVM	7	2	...
CS	55	4	...
Total	2915	528	18.1

NP—Normal primipara
NM—Normal multipara
LFP—Low forceps primipara
LFM—Low forceps multipara
M&HFP—Mid and high forceps primipara
M&HFM—Mid and high forceps multipara
BR—Breech
PV—Podalic version
CS—Cesarean section

Schleich attributed hemorrhage in the retina to asphyxia and venous congestion. Jacobs thought this was not so likely since there were relatively fewer hemorrhages in retinas following breech delivery.

Sykes noted a general, but no definite, relationship between intracranial injury and hemorrhage into the retina. Rowland warned that the use of pituitrin might possibly be a cause of retinal hemorrhage in the baby. Prematurity as a cause of retinal hemorrhage has been mentioned by several authors. Eades thought that the duration of labor had little effect, but that the use of forceps was a definite factor. He also found no definite relationship between intracranial damage and hemorrhage into the retina. Dr. Zentmayer, in discussing Jacobs' paper, thought that it was not surprising that hemorrhage should occur in the retina of a fairly large number of the newborn. This was based on the findings of Cruickshank, who had found hemorrhage in one tissue or another of 60 to 80 per cent of the newborn. However, Dr. Zentmayer did suggest that there might be anatomic reasons for the hemorrhages.

Jacobs found hemorrhage in the retina in 1 of 3 patients with hemorrhagic disease of the newborn.

Hemorrhages vary greatly in extent and appearance. They may occur anywhere in the fundus, though most of them are seen around the posterior pole. There may be a single flame-shaped lesion on the disk, at the disk border, or along the retinal vessels. On the other hand, the greater portion of the fundus may be covered with hemorrhages, partly or completely covering the disk and including the macula. Grossly, there are 4 types of hemorrhages seen, as described by Richman. The flame-shaped are by far the most common; next are the grossly round ones which are considered as being in the deeper layers of the retina, or possibly even in the choroid. They are bright red in color. Then there are some sharply circumscribed, perfectly round, and deep red hemorrhages. Occasionally one of these has a pin-point white center. These occur rather infrequently and may occur anywhere, but I have seen at least a few of them in the macula. The fourth group consists of subhyaloid hemorrhages. These are seen quite infrequently.

TABLE II

RETINAL HEMORRHAGES IN RELATION TO TYPE OF DELIVERY—PRIVATE PATIENTS

Type	*No. of Cases*	*Hemorrhages*	*Per Cent*
NP	16	4	25.
NM	78	13	16.6
LFP	168	25	14.8
LFM	93	16	17.2
M&HFP	36	13	36.1
M&HFM	23	5	21.7
BR	18	0	...
PV	1	1	...
CS	33	0	...
Total	466	77	16.5

Same abbreviations as in Table I.

The hemorrhages found in this group according to the type of delivery and the parity of the mother are noted in Table I for the ward patients, and in Table II for Dr. Porter's private patients. These are presented separately for several reasons. Many of his patients have had medical or surgical induction of labor and nearly all of them have had obstetric analgesia and amnesia by pentobarbital sodium. I think it is quite obvious that these procedures in skillful hands certainly have not increased the number of hemorrhages found. It should also be noted, however, that the percentage of hemorrhages in the ward babies has decreased somewhat during this study. The first 326 ward babies in the series had a retinal hemorrhage percentage of 21.2. Since then the obstetricians have all been conscious of the condition and have taken certain steps with the idea of preventing it. One point in particular is worth noting. In the early group 5 out of 16 patients whose mothers had received pituitrin in the second stage of labor showed hemorrhages in the retina. I have no further cases of this particular circumstance to report since that fact was announced. At the present time I believe there is very little, if any, difference in the number of hemorrhages between the ward and the private patients.

TABLE III

RETINAL HEMORRHAGES IN RELATION TO DURATION OF LABOR—WARD PATIENTS

Duration	*No. of Cases*	*Hemorrhages*	*Per Cent*
Under 2 hrs. ..	275	50	18.2
2-6 hrs.	755	120	15.9
6-12 hrs.	768	128	16.6
Over 12 hrs. ..	727	158	21.7

Duration of labor was not tabulated for the first 334 ward babies, and, of course, the cesarean sections were also excluded.

TABLE IV

RETINAL HEMORRHAGES IN RELATION TO DURATION OF LABOR—PRIVATE PATIENTS

Duration	*No. of Cases*	*Hemorrhages*	*Per Cent*
Under 2 hrs. ...	40	8	20.
2-6 hrs.	131	28	20.6
6-12 hrs.	132	22	16.6
Over 12 hrs. ..	130	19	14.6

Cesarean sections were excluded in this table.

The number of hemorrhages in relation to the duration of labor is indicated in Tables III and IV for the ward and private patients respectively. Considering the ward patients by themselves, it appears that the short and the long labors result in the greater number of hemorrhages in the retina. When we come to Dr. Porter's private patients, however, the picture is not quite the same, in spite of the fact that he has relatively the same distribution of duration of labor as the ward patients. Here it is proper to state that many of Dr. Porter's patients have early surgical rupture of the membranes. This point will be discussed further.

Hemorrhages occurred in 605 patients of the entire group. They occurred 146 times in the right eye, 162 times in the left eye, and 297 times in both eyes. The entire group was tabulated to see if any relation existed between the occurrence of the hemorrhage in either eye and the head presentation at delivery. However, it was found that approximately the same distribution obtained for the right occiput as the left occiput presentation. The same incidence of retinal hemorrhage obtained in the colored and white babies.

Twenty-three premature infants were examined in the group, and in spite of our previous ideas on the subject, hemorrhages were found in only 3 instances.

Twenty-two patients of the entire group had corneas which were quite steamy, so that the fundus examination was definitely not as satisfactory as could be desired at the first examination. Most of these were examined later, and if hemorrhages were found the second time, they were noted.

Toxemia of late pregnancy of the mother existed in 93 of the babies examined. This included cardiovascular insufficiency, low reserve kidney, pre-eclampsia, and eclampsia. Of this group, 23 babies showed retinal hemorrhages. Twenty of this group were either cardiovascular or low reserve kidneys, and only 2 of this 20 had hemorrhages into the retina. This leaves 73 classified as pre-eclampsia and eclampsia, 21 of whom showed hemorrhages into the retina of the babies, the percentage in this particular group thus being 28.8 per cent. This is suffi-

TABLE V

RETINAL HEMORRHAGES IN RELATION TO TOXEMIA OF PREGNANCY

	No. of Cases	*Hemorrhages*	*Per Cent*
Low reserve kidney Cardiovascular....	20	2	10.
Pre-eclampsia..... Eclampsia........	73	21	28.8

ciently high to be considered a factor of importance.

There were 10 babies with the clinical diagnosis of intracranial hemorrhage whose eyegrounds were examined. Two of these died within the first few days of life; both had retinal hemorrhages. Only 2 of the remaining 8 had retinal hemorrhages. Three of the 8 had bloody spinal fluid, but none of these 3 had hemorrhages in the retina. Thus, in this group, there were 4 out of 10 who had hemorrhages. The occurrence of hemorrhage in the retina is thus not a definite indication of intracranial injury, nor does it always accompany intracranial injury. It can only be said that a slight but inconstant relationship exists between the two conditions.

Eleven patients had various types of hemorrhagic disease of the newborn. The findings are shown in Table VI. The patient diagnosed as having hemorrhagic disease of the newborn and who did not have hemorrhages into the retina, very interestingly was delivered as a breech.

There is one other thing for which I do not have available statistics, but which is quite frequently observed, and that is the length of time intervening from the rupture of the membranes to the delivery. It is frequently found, in going back over the charts, after having found hemorrhages in the retina, that the membranes have been ruptured two hours or more before delivery.

There are only 3 causes of hemorrhage: (1) a break in the vessel wall, (2) an increase in the fluid pressure to force blood out of the vessel, and (3) a change in the quality of the fluid so that it can escape from the vessel more readily. Obviously, 2 or 3 of these conditions can exist in the same patient. A change in the quality of the fluid is well demonstrated in the hemorrhagic diseases of the newborn, and even though we have only a small group of these, the findings are sufficiently striking to need no further discussion. This is also suggested by the findings in the patients whose mothers had eclampsia or pre-eclampsia.

Disease of the vessel walls might very easily be present in patients with congenital syphilis. However, untreated maternal syphilis is very uncommon in these days, but the number of hemorrhages occurring in babies of syphilitic mothers who have been treated is not any greater than in the group as a whole; 106 patients whose mothers had syphilis, all of whom had some treatment, revealed hemorrhages in the retina of only 14 babies, or 13.2 per cent.

As far as pressure is concerned, I think we have every right to assume, from the change in the rate and type of fetal heart sounds, that marked changes in the fetal blood pressure take place during labor. It is also quite obvious that marked venous congestion occurs in many of the babies, as shown by asphyxia and cyanosis of the face. In this connection another factor may be operative when the fetal membranes have ruptured. As long as the membranes have not ruptured, the force of the uterine contraction is exerted equally in all directions by the amniotic fluid, and any increase in fetal intraocular arterial pressure is definitely counterbalanced by the hydrostatic pressure of the amniotic fluid against the outside of the eye. However, when this pressure is released by the rupture of the membranes, there is nothing to increase the intra-ocular pressure from the outside when the arterial pressure goes up, and it seems to me that this might reasonably be considered a factor in some of the patients.

The hemorrhages definitely occur more frequently following the application of forceps, especially following the application of mid and high forceps. The low forceps applications are followed by a relatively small number more retinal hemorrhages than the normal deliveries of the same type. If we are permitted to assume that the forceps are applied in the more difficult labors, the percentage of increase of hemorrhage, as noted in Tables I and II, certainly is not great.

As to any permanent ill effects resulting from these hemorrhages, I have not sufficient data to be of statistical value at this time. The follow-up of these patients with the greater number of hemorrhages, especially those in the macular

TABLE VI

RETINAL HEMORRHAGES IN RELATION TO HEMORRHAGIC DISEASES OF THE NEWBORN

Disease	*No. of Cases*	*Hemorrhages*
Physiologic jaundice	1	0
Melena neonatorum	1	0
Primary anemia	1	0
Icterus gravis	4	4
Erythroblastic anemia	2	2
Hemorrhagic disease of newborn	2	1

region, is being studied. However, I think the possibility of damage to the retinal elements cannot be denied. Rowland followed up 6 patients who had retinal hemorrhages at birth; 5 of these had good vision in both eyes, the other was too young for visual acuity determination. Jacobs opened his second paper on the subject stating that there were no ill effects, but in closing the discussion of this paper stated that one of his patients had amblyopia, and that this particular patient had more hemorrhages in the retina than any other in his group of 13 which were followed.

Upon absorption of some of the large flame-shaped hemorrhages, I have found thickened retinal striae where the hemorrhages previously existed.

The fundus findings are suggestive only of the presence of intracranial hemorrhage and can be taken as circumstantial evidence only in the presence of other clinical symptoms. The pediatrician in charge of the nursery is notified immediately if more than a few hemorrhages are noted. From their experience with this group of examinations, the pediatricians of Abington consider the finding of a considerable number of hemorrhages in the newborn retina of definite clinical importance. The indicated studies and treatment are instituted immediately. Frequently antihemorrhagic treatment is instituted.

Summary

The report covers the examination of 3381 newborn. Less common abnormalities and conditions found are enumerated. Retinal hemorrhages are studied with the idea of suggesting possible causes of the same. Difficult labor can definitely be established as a factor. Maternal toxemia and hemorrhagic disease of the newborn are apparently causes. Early rupture of the membranes is suggested as a factor in releasing the counterbalancing hydrostatic pressure against increased arterial pressure of the baby during uterine contraction. The fundus findings are of definite clinical value to the pediatrician in his management of the newborn infant.

I am indebted to the pediatric and obstetric departments of Abington Memorial Hospital for their co-operation, and I am especially indebted to Dr. Porter for permission to examine his private patients.

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SHORTAGE OF CHLORINE SHOULD NOT AFFECT PUBLIC HEALTH

The safety of your drinking water, your swimming pool, and the cleanliness of the drink you obtain at a roadside hot dog stand are being protected despite the shortage of chlorine.

Correspondence between Dr. Thomas Parran, Surgeon General, and the Director of Priorities, E. R. Stettinius, Jr., reveals that there is plenty of chlorine to take care of the needs of public health.

The only danger to the supply for water works and sanitation seems to lie in an unfounded fear that a shortage will develop. Acting on this fear, some buyers are overstocking, thus tying up containers. Lack of these containers may slow up the filling of new orders.

Public health uses of chlorine have been put on a par with defense needs by the Office of Price Administration and Civilian Supply. Adequate supplies are insured for water purification, sewage treatment, sanitation, refrigerant gases for existing equipment, slime control in industrial plants, preparation of products for medicinal use, preservation and processing of food products.

Not specifically mentioned in this provision is the use of chlorine by many soda fountains, roadside stands, and bars for the sterilizing of dishes and glasses where steam or boiling water is not readily accessible. Chlorine is also widely used on dairy farms and city milk plants to kill bacteria in containers and to sterilize the hands of milkers and the udders of the cows before milking.

For these purposes, a dry form of chlorine—sodium hypochlorite or calcium hypochlorite—is used, not the liquid chlorine commonly used as a bleach as well as a disinfectant.

The OPACS is depending on distributors of this dry chlorine to see to it that these important public health needs are adequately filled.

Public health officials know of no substitute which will kill the germs and not endanger humans.

They warn that without careful sterilization of milk containers, drinking glasses, and dishes, there would certainly be a spread of many diseases carried in this way, including colds and influenza, tuberculosis, typhoid fever and paratyphoid fever, septic sore throat, diphtheria, and scarlet fever.

Of the present production of chlorine, it is estimated that about 30 per cent will go for defense. Only about 5 to 7 per cent is needed for sanitation. It has been put up to the housewife, the laundry, and the paper manufacturer, who use chlorine as a bleach, to cut down their use of chlorine so that neither public health nor defense uses need be curtailed.—*Science News Letter.*

Observations of the Larynx in Diseases of the Upper and Lower Respiratory Tract

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THE basis of this brief résumé is the clinical study of the larynx in cases with subjective complaints referable to the ear, nose, throat, and chest. The majority of the cases seen were considered ambulatory; most of those with tuberculosis were on sanatorium or home treatment.

Because of the time limit, only the more common conditions observed will be considered in this presentation.

The clinical invasion of the larynx following upper and lower respiratory infection is one of the most frequent complications that the laryngologist is called upon to treat, acute laryngitis being probably the commonest of all human ailments. Vitamin deficiency and exposure to cold and wet clothing are causative factors. The organisms most frequently associated with acute laryngitis are Streptococcus viridans, Staphylococcus albus, Staphylococcus aureus, pneumococci of different types, Micrococcus catarrhalis, and Bacillus influenzae. It is probable that in some cases none of these organisms are the primary invaders.

This bacterial flora and the incidental presence of varied other types of organisms, together with exposure, prolonged fatigue, overheating, and sometimes a sudden chill, aid the toxic weakened background and attack an individual with a susceptible larynx.

The clinical picture of acute laryngitis is the same as the acute invasion of mucous surfaces elsewhere. The mirror examination shows an acutely inflamed mucosa. The acute inflammation is easily visualized, the appearance varying slightly with the stage of the disease. The color shows vascular engorgement; in the earlier stage only the epiglottis may be involved. Within 24 hours, however, usually this reddish discoloration extends over the entire larynx.

The chief symptoms are usually slight dryness of the throat, a tickling sensation felt in the region of the larynx causing cough, sudden alteration of the voice, constant clearing of the throat, hoarseness, or cough and difficult expectoration. The diagnosis is made by a laryngeal examination. *If the mouth can be opened,* any larynx can be examined. The larynx *must* be visualized before one can give an opinion. To express an opinion on laryngeal involvement without seeing the larynx seems to me to be impossible. The differential diagnosis from diphtheria cannot be made except bacteriologically until the stage of membrane formation. This stage should never be awaited; cultures should always be taken in acute inflammatory conditions of the larynx as well as in similar conditions of the pharynx, fauces, and nares. Allergic conditions can be excluded only by the usual tests. Allergic patients with laryngeal involvement present a much less reddened inflammatory appearance, but the diagnosis of allergy cannot be made on appearance alone. Consultation with the allergist is to be recommended in these cases.

Edema of the larynx is frequently seen in patients with nephritis, either acute or chronic.

Acute laryngitis is almost invariably secondary to invasion from a similar existing condition in the nose and nasopharynx. The etiologic factors are of particular importance because of the so frequently correlated involvement of the entire rhinopharyngeal tract, including the nasal accessory sinuses, and because acute laryngitis so frequently tends to repetition. The mucosa over the tonsils may participate, and sometimes the complication of acute tonsillitis involving the deeper structures may be added. Acute laryngitis may appear in patients afflicted with any disease, general or local; but for some as yet unexplained reason, according to Jackson, patients with serious diseases of the larynx are not as subject to the acute infective diseases as those in whom the larynx is relatively normal.

Vincent's infection, sometimes painful, which may involve the tonsillar region, pharynx, and

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uvula, is occasionally observed. The ulcerations may become widespread extending into the nasopharynx. Because of the many varied opinions regarding the treatment of this condition, it is impossible for one to suggest a cure-all régime. It is quite possible that one patient may respond to one form of treatment more readily than another. All agree, however, that the intake of a well-balanced diet, increasing vitamins C and B_2, is essential in the treatment. The bacteriologic diagnosis of Vincent's infection is considered positive.

Influenza, grippe, and "severe cold" are more or less severe forms of acute laryngitis; there is an associated tracheobronchitis as well as a rhinitis and pharyngitis. The disease is frequently continuous from the anterior nares to the peripheral bronchi. In our experience the esophagus has never been involved. A violent form of the disease is acute streptococcic laryngitis. A bacteriologic study of the culture establishes the diagnosis.

We have frequently observed cases of acute laryngitis in the stage of hoarseness, the contributory cause being one or both maxillary sinuses; the condition improves after proper treatment of the antra. Curiously, our observations have been that infection of other sinuses is less frequently associated with as severe an acute laryngitis as the type seen where the antra alone are infected. From its vulnerable position and frequent bombardment the trachea would seem to carry a special resistance and immunity. Many cases of severe laryngitis have been seen with no involvement of the trachea or possibly only slight involvement of its upper third.

The focal sequence from higher respiratory areas is a logical one; diseased faucial tonsils or any part of the Waldeyer ring, defective dentition, sinus infection, chronic discharging ears, general infective adenitis, or perhaps all of these seem to be among the chief causative factors. An intelligent analysis of hygienic, systemic, focal, and coexistent disease factors is the only effective means of directing treatment. The most common sequelae in neglected cases are chronic tracheitis, bronchitis, laryngitis, or all three.

An acute specific infective inflammation of the larynx is sometimes seen in children. This is known as acute infective laryngotracheobronchitis. The mucosa of the larynx, trachea, and bronchi is of an intense redness; occasionally, bloody spots are seen, together with thick, obstructive, often crusting, nonmembranous exudate in the tracheobronchial tree. The condition may be confused with diphtheria. A culture taken will help, as the bacteriologic diagnosis of diphtheria is reliable.

In the nonspecific forms of acute laryngitis, the condition does not follow a regular course. Trauma inflicted by a foreign body, or by excision of tissue for examination, will be followed by a slight localized inflammatory reaction, with no systemic disturbance of any kind; the inhalation of irritant gases such as chlorine, bromine, iodine, ammonia, and various fuming acids may also cause a similar condition.

The chief complaints of the patient are hoarseness and difficulty in clearing the voice. The acute inflammation is accompanied by an intensely light red mucosa.

Chronic laryngitis is also a very common disease, and is frequently seen in patients referred for laryngeal examination. The cause of chronic laryngitis is often repeated infection, plus constant irritation, or the excessive use of tobacco, failure to check a simple persistent evidence of cold, unfavorable climatic environment, misuse or abuse of the voice in singing, occupational demands for continued forceful speech, organized athletic cheering, etc. It would seem to occur particularly in individuals whose resistance is low. The defensive powers of the mucosa may be ample to repel a primary onslaught, but they are overcome by a prolonged siege. This fundamental fact must be constantly before us if we are to comprehend the etiology and pathology and to institute efficient prophylaxis and treatment.

Chronic laryngitis is many times associated with similar conditions of mucosal inflammation in the pharynx, nasopharynx, and accessory sinuses. Extending downward, it is also frequently associated with a chronic tracheitis and chronic bronchitis. Chronic laryngitis also accompanies tuberculosis, cancer, and all other chronic diseases involving the laryngeal mucosa. Other fundamental facts are that this condition may be primary in the trachea or primary in the larynx, the extension being by continuity of tissue, or they may both be due to a common cause, that is to say, the irritation may be in part the product of infective foci above and below the larynx and those foci may be the source of the reinfection of the laryngeal mucosa, also the secondary tissue changes produced by the factors mentioned before become themselves additional perpetuating factors.

Contact ulcers may occur and are occasionally seen. They, as we know, are benign nontuberculous lesions, which may become cancerous if neglected. Also, lesions somewhat similar may occur in tuberculous laryngitis. A contact ulcer, first described by Jackson, has the appearance of a superficial ulcer with a small yellow-gray or brown point denoting the ulcerated tip of the arytenoid cartilage. The edge of the ulcer may be grayish. It may be unilateral or bilateral. The more or less constant abuse of the voice probably is responsible for the necrosis of the vocal process of the arytenoid cartilages caused by the constant hammering of one arytenoid cartilage against the other. In 2 of the cases seen by the essayist the patients felt sure they had tuberculosis. In the 5 cases which came under our observation, all had sinus trouble; all used their voices excessively. All asserted positively that they talked very little. It has been our experience that all patients placed on vocal rest pay very little attention to this most important part of laryngeal treatment.

Tuberculosis is one of the commonest laryngeal lesions. It is rarely that we see a normal larynx in a patient with pulmonary tuberculosis. Estimates as to the percentage of cases of pulmonary tuberculosis that have laryngeal complications vary with the stage of the disease. Approximately 75 per cent of the patients who die of pulmonary tuberculosis have tuberculous laryngeal lesions; it is necessary to remember, however, that if they die of pulmonary tuberculosis, it is usually a very advanced stage of the disease.

The route of invasion is probably through the laryngeal mucosa; it has not been proven that this is the route always, or even usually followed. There is much to say in support of the opinion that the route downward through the lymphatics is from the tonsils where the Bacillus tuberculosis has been harbored, with or without having produced a local lesion, most often without. There is also much to support the opinion that the invasion of the larynx is from the lungs upward through the lymph channels, one of the strongest clinical facts being that pulmonary tuberculosis practically always precedes laryngeal tuberculosis. The possibility of the blood channels serving as a route is generally accepted, though it is supposed to be a route less common than the lymph channels. In either case the respective types of vessels afford just as direct a route as the air passages. The epithelium on the surface of the mucous membrane would seem to present an excellent barrier of defense.

The possibility of surface infection from the pulmonary secretions may be considered as probably true in advanced cases of pulmonary phthisis where large quantities of bacilli-laden mucus stagnates in the larynx and hence there is an opportunity for the penetration of the tubercle bacillus similar to that found in the disintegrated epithelium of the crypts of the tonsils. This epithelial barrier is probably so disturbed by cough and so perforated by the emergence of leukocytes that an ample opportunity for entry is afforded. Abuse of the voice is certainly a factor in localization in the larynx. Many times in examining the larynx of a tuberculous patient we have observed a slight inflammation probably caused by excessive coughing and not by an invasion of the organism.

At the onset of tuberculosis only a cough may be present, but it is much more frequently of pulmonary than of laryngeal origin. The outstanding feature is that the voice is not only impaired in quality but it is usually weak.

The so-called turban epiglottis seen in the earlier stages of tuberculosis may be preceded by a thickening near the free edge of the epiglottis or a similar thickening near the base, the lesion being redder than the surrounding areas and of a firm appearance. This rounded swelling is usually a fibrous infiltration and not a true edema. Cases are not infrequently seen in which the epiglottis is partially destroyed by multiple ulcerations. A smooth rounded swelling of the arytenoid cartilages involving the aryepiglottic folds may be seen in the earlier stages. Probably the most frequent site of the disease in early involvement of the larynx is the posterior commissure. The next most frequent location is the vocal cords, the ventricular bands, and the epiglottis. One of the most common of the very early lesions is redness of one cord. The reason for this local hyperemia is not known and it is not limited to tuberculosis; it is also often the forerunner of malignant disease, especially carcinoma. The redness of the cord is in marked contrast to the pallor of the mucosa. As described by Burns, almost all patients in the anemic stage of tuberculosis have this pallor of the mucous membrane in the pharynx and fauces. In the earlier stages the cords may approximate very well and their edges may look thin enough to vibrate, but they seem to be *inefficient in the production of sound.* This is probably caused by a mass of tuberculous infiltration in the posterior commissure, which may make it impossible for the musculature to approximate the cords. There may be a tuberculous compressive lesion, of glandular form, in the course of the recurrent laryngeal nerve. There may be involvement of the crico-arytenoid joint, or the muscles may be infiltrated with tuberculosis.

In the advanced stages of tuberculosis, anemia of the lesion is very suggestive in contrast with the red, angry appearance of a syphilitic ulceration. The early stage of the ulcer in cancer as described by Clerf looks very much like a syphilitic ulceration, but it usually lacks the redness and the punched-out appearance so frequently seen in syphilitic ulcers. Later on the cancerous lesion has the whitish projecting points that are seen in malignancy.

In considering the differential diagnosis of tuberculosis, syphilis, and benign and malignant growths of the larynx, we may have tuberculosis or syphilis coexisting in the same lesion with cancer, or all three may be combined in one mixed lesion. A syphilitic lesion in the larynx inefficiently treated may remain stationary for years. A positive serologic test does not necessarily mean that the lesion in the larynx is syphilitic.

We sometimes see a tuberculous laryngeal lesion which has the appearance of malignant disease (only biopsy can determine the diagnosis, and this should always be done) even though the patient has a positive sputum, because there may be a mixed lesion. Furthermore, if the condition is malignant, we must have a specimen of tissue, preferably from several areas, to determine the degree of malignancy.

Tucker reported a case showing cancer and tuberculosis in the same lesion. There is no harm done to a tuberculous lesion in the larynx by taking a specimen for biopsy, provided care is taken not to remove any portion of the vocal cords. Tuberculous excrescences on the cords can be scalped off without injury, care being taken so that normal tissue is not damaged.

Pain is one of the most annoying symptoms of laryngeal tuberculosis; however, the absence of pain is no proof that the larynx is not affected. The pain may be dependent more on the location of the disease than its extent. Frequently, there may be more or less constant distress, the extreme suffering usually being present during attempts at swallowing. This painful swallowing may occur at an early stage when the lesion is extrinsic, some foods being tolerated better than others; odynophagia seems to be more pronounced when the epiglottis is involved, also it may be very severe where there is ulceration on the exposed portions of the arytenoid cartilages or along the aryepiglottic fold. This latter condition is frequently seen. The pain may be severe when the crico-arytenoid joint is involved. Pain may be felt in the diseased area or may be referred to the upper part of the neck behind the angle of the jaw, and especially to the ear.

For odynophagia a solution of cocaine alkaloid, methol, and *light* mineral oil may be sprayed into the larynx an hour before meals with good effect. Cracked ice, either sucked or applied externally, is sometimes helpful. Curative results have been obtained by Lukens from the local application of chaulmoogra oil. At the Eagleville Sanatorium, Rush Hospital, and the City Chest Clinic, we have obtained good results by using Lukens' chaulmoogra oil combined with menthol and cocaine alkaloid, requesting patients not to swallow the excess or overflow. Lately we have been using Jackson's mono-P-chlorphenol solution almost entirely, with excellent results. In these local treatments of tuberculosis of the larynx the solutions used are applied by the swab method, or preferably instilled into the larynx. Since these solutions are applied only to the surface of the larynx, only the surface lesions will be affected. Careful treatment of infections of the sinuses and nasopharynx is very essential in treating these patients. The severe otalgia sometimes seen in the ulcerative cases (with normal drumhead) may be temporarily relieved by intranasal cocainization of the sphenopalatine ganglion, or by injecting the ganglion with novocain or alcohol.

In advanced cases great discomfort and often actual pain is caused by the adherence of partially dried pulmonary secretions to the inflamed laryngeal mucosa. Medication causing this dryness should, if possible, be avoided. Painful swallowing *must* be dealt with, otherwise the patient will not take food, and food is fundamental to the treatment of tuberculosis. The patient *must be made* to realize this. We have tried unsuccessfully on several occasions to have a gastrostomy performed under local anesthesia. We believe there is very little shock associated with this procedure. My feeling is that it should be recommended in certain cases, as nourishment is most important in treating any disease. Nasal feeding in our experience has been unsuccessful. The tube is a source of irritation and constant annoyance to the patient and he removes it.

Recently, we have been using x-ray on patients suffering with odynophagia caused by ulcerations where presumably secondary invaders (staphylococcus and streptococcus) are the chief offenders. Dr. Jack Cohen has been treating our Eagleville cases, using x-ray in small doses (50 r) with medium filtration at intervals of 3 or 4 days. Patients so treated have had marked relief from pain. Wood, Lukens, Burns, and others have reported excellent results in the treatment of tubercular lesions of the larynx with the galvanocautery. In using this technic the current used must be sufficient to heat the cautery knife to a white heat almost at once. The operation is done under local anesthesia. In a nonulcerative infiltration the cold point of the electrode is pushed in to the required depth. The current is turned on and the electrode is withdrawn immediately—hot. In treating ulcerations the flat platinum electrode is used. The flat surface is held against the ulcer *cold* and the current turned on; the whole base of the ulcer should be distinctly seared superficially unless there is much infiltration. Experience alone enables the operator to judge best the amount and character of the burn to be made as well as the method to be employed, that is, whether by direct or indirect laryngoscopy. The indirect method in well-trained hands is a very desirable way of working.

Injection of the superior laryngeal nerve with 95 per cent alcohol may abolish pain on swallowing for a few weeks; considerable pain may be experienced for several seconds by the patient during this manipulation. The procedure may be repeated as often as the pain returns. In some cases no relief is experienced, due either to faulty technic or to the fact that the lesion is extralaryngeal.

A tracheotomy may have to be performed to prevent asphyxia if the laryngeal lumen becomes occluded by tuberculous deposits. The reason for the belief that the larynx is rested by this operation is the escape of air from the passage after tracheotomy has been performed. The free admission of air into the lung cannot be otherwise than helpful as compared to the restricted air intake in cases of tuberculous laryngeal swellings. It seems to us that the restfulness of the easy breathing is better for the patient than the constant anxiety and struggle incidental to air hunger, together with the associated dysphagia. The tracheotomized patient requires no more laryngeal care than any other patient wearing a tracheotomy cannula, and our experience has been that the patients so treated are made much more comfortable. The laryngeal pathology of a number of patients seen at Eagleville Sanatorium, Rush Hospital, and the City Chest Clinic is considerably benefited by the administration of artificial pneumothorax and other procedures now used by the phthisiologist. We also observed, however, that in the so-called hopeless cases careful treatment may and often does check the laryngeal lesion or even improve it to a certain extent.

In advanced hopeless cases, although cure or arrest of the disease is out of the question, the remaining days of the unfortunate victim should be made as comfortable as possible by any treatment which will relieve the pain and discomfort and lessen the agonies of dysphagia and odynophagia.

The fundamentals in the treatment of laryngeal tuberculosis are the best possible medical care and management of the pulmonary condition, also vocal rest. The chief sequel of laryngeal tuberculosis is laryngeal stenosis. This applies especially to the ulcerative forms of the disease, and to those associated with perichondritis. The worst stenotic sequelae occur in cases where there has been chondral necrosis as a consequence of perichondritis. Untreated laryngeal lesions usually become progressively worse, depending more or less on the condition of the chest. However, it is quite probable that some extensive tuberculous lesions of the larynx may heal spontaneously. The inability of the patient to swallow food may be a contributory factor in hastening the end. It is also possible for a patient to develop an inspirational pneumonia from liquids and food passing into the trachea, due to dysphagia. If the patient is seen early enough and proper treatment is instituted, the prognosis should be favorable. Even in some fairly well-advanced cases appropriate local treatment affords a fair chance. So far, however, we have not observed recovery of a patient in whom the disease involving the larynx has progressed until more or less of the pharynx was also involved. Finally, we feel that it is next to impossible to help a patient who will make no effort to stop talking.

Conclusions

Early recognition, which means frequent examinations of the larynx and early treatment of the cause when discovered, is one of the most important factors in the successful treatment of diseases of the larynx. The reduction of laryngeal conditions may be brought about not only by early recognition of existing disease but also by prophylactic measures in those susceptible to the many laryngeal diseases.

Excepting in those sanatoria or tuberculosis clinics in which examination of the nose and throat is a routine procedure in all cases of pulmonary tuberculosis, invasion of the larynx is usually well under way before it is recognized, and treatment is rarely begun until long after the onset of this complication.

In all cases where there is some doubt regarding the diagnosis, examination of a specimen of tissue from the larynx is indicated and should always be done in any kind of case. It is a harmless procedure when properly done; it requires only a few minutes and its results are usually conclusive. It is impossible for the histologist to give a dependable opinion unless he has an ample quantity of representative tissue. By direct laryngoscopy it is possible to furnish such a specimen taken from several areas of a representative part of the lesion.

ABSTRACT OF DISCUSSION

Gabriel Tucker (Philadelphia): Dr. Whelan has called attention to the most important considerations in the diagnosis and treatment of laryngeal disease, particularly in its relation to the upper and lower respiratory tract. I wish only to emphasize a number of things that he has already mentioned.

It is important in treating laryngeal disease to recognize the early symptoms so that the condition may be fully recognized in its beginning. The subjective symptoms of early laryngeal disease are hoarseness and local discomfort. In the acute infectious process, pain may also be an early symptom. A patient suffering from an associated respiratory infection, upper or lower, may have the larynx entirely overlooked or at least inadequately examined because of the attention that is directed to the other conditions. I should like to emphasize particularly a careful routine mirror examination. Most otolaryngologists will admit that they do not give nearly as much time to examination of the larynx as they do the ears, sinuses, and other structures that they treat in their practice of otolaryngology. Anything that we can do to emphasize the necessity for careful examination, thereby securing the co-operation of the otolaryngologists, will be of very great value in the early diagnosis and treatment of laryngeal diseases.

I should like to emphasize first the necessity of careful mirror examination, and in all cases where mirror examination does not reveal adequately the larynx, the use of the direct examination. In order to refresh the memories of those otolaryngologists who have given very little attention to mirror examination, I would like to show a motion picture illustrating just what the laryngologist can see. In all cases where the appearance is not so characteristic as to make a diagnosis certain, mirror study, the removal of cultures by direct or indirect examination, the exposure by direct laryngoscopy of areas not visible with the mirror, and finally, in the differential diagnosis of ulcerative lesions, biopsy should be employed. It is well recognized that biopsy is most satisfactorily done by direct laryngoscopy. The matter of tracheotomy in cases of tuberculosis of the larynx in which there is an obstructive lesion has been properly considered, in my opinion, by Dr. Whelan. It will afford rest to the larynx that cannot be obtained in any other way and aid in the patient's fight for his recovery from the tuberculous infection.

Dr. Whelan has very well stressed the difficulty in securing absolute vocal rest. This difficulty should make us all the more insistent in having a patient co-operate in this regard. Absolute vocal rest means that the patient should use a pencil and paper and write everything that he has to say. Whispering should be avoided.

There is one important prophylactic and curative measure that Dr. Whelan has not mentioned, and that is abstinence from the use of tobacco in all types of inflammatory or ulcerative laryngeal disease. My observation over a number of years of various types of laryngeal conditions has shown that the larynx is benefited very greatly by abstinence from tobacco. After the patient has successfully mastered the tobacco habit, the only complaint he can find usually is that of gaining too much weight because of his increase in appetite and general well-being.

BOOM TOWNS OF CONSCRIPTION

A new problem in medical care has been added with the sudden creation of huge camps for our draftees. It has been estimated that nearly one civilian will be added to the population of a town for every soldier in a near-by camp. In some cases, camps of 60,000 men have been situated near towns which are little more than villages. One can imagine the acute health problems that will be created, for instance, in a town which has a normal population of 10,000 and almost overnight is expanded to a small city of 50,000.

Regular housing will be at a premium and its cost prohibitive. Shacks and nondescript shelters will be erected as fast as carpenters can knock them together. Trailer camps and tent camps will spring up like mushrooms. Sanitation will be almost nonexistent.

Even the boom towns of gold rush and oil rush days had less of a health problem than these modern boom towns will face, for then the population was almost exclusively male. There will be the same vice problems even though these modern boom cities will receive their increase in population by the influx of entire families. This, too, will tax the educational facilities of these boroughs.

No doubt the army has made very complete plans to cope with this situation, but it will strain its ingenuity to the utmost to master it. Overcrowding and poor sanitation will breed epidemics and these will spread to communities over which the army has no jurisdiction or control. However, if the medical profession and the civilian population will face the possibilities, there is ample opportunity to combat them and the coming of spring will prove an ally.—*The Weekly Roster and Medical Digest.*

ABREAST OF MEDICAL PROGRESS

The editorial conferees are convinced from their preview of the contents of this issue of *The Pennsylvania Medical Journal* that its pages offer to the inquiring practitioner information and advice that will help to keep him abreast of many of the phases of successful practice even in these kaleidoscopic days marked by both therapeutic triumphs and patriotic responsibilities for the medical profession. Read the issue from cover to cover including our advertisers' pages and those of all contributors, reporters, and commentators, then forward to the *Journal* office your constructive criticisms and suggestions looking toward a *Journal* increasingly helpful to an increasing number of readers.

The Rôle of Nephrectomy in Hypertension

BOLAND HUGHES, M.D.
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HYPERTENSION accompanying chronic glomerulonephritis, polycystic kidneys, obstruction of the urinary tract, renal panarteritis, and severe renal amyloidosis has been generally recognized to be of renal origin. The coexistence of other renal disease and hypertension does not indicate that the renal disease causes the hypertension. Even if we demonstrate that a specific renal lesion has caused a specific instance of hypertension, we are unable to say how much of the total incidence of hypertension is due to such renal lesions. Since Goldblatt and his associates, however, in 1934 demonstrated that renal ischemia in experimental animals causes continued arterial hypertension, probably due to a pressor substance elaborated by the affected kidney, the relationship of hypertension to renal disease has been re-evaluated. Clinical investigation has revealed the association of hypertension with the following pathologic conditions: (1) arteriosclerotic occlusion of the main renal arteries; (2) an intravascular muscle plug in the main renal artery; (3) thrombo-arteritis obliterans of the small renal arteries; (4) compression of the renal arteries by a lymphosarcoma; and (5) renal vascular narrowing in certain cases of pyelonephritis.

In all of these clinical cases the least common denominator was renal ischemia due to mechanical obstruction of the arterial blood flow through the kidneys. If we transpose Goldblatt's results to clinical medicine, we have in these reported cases a causal relationship between renal ischemia and hypertension.

Of the various pathologic conditions which we have mentioned as being associated with hypertension, presumably on a renal ischemic basis, we are most interested in pyelonephritis due to its prevalence, particularly the chronic, undramatic, frequently unrecognized type which causes progressive fibrosis and scarring in the kidney areas involved.

In 1937 Longcope[5] found intermittent or continuous elevation of blood pressure in 12 of 22 cases of pyelonephritis. Butler[6] has reported the association of chronic pyelonephritis and hypertension in 15 children in which diminution of renal function did not occur until late in the disease. Recently, Weiss and Parker[7] concluded from the necropsy studies of 100 cases of pyelonephritis that this disease is an important cause of renal vascular narrowing and that hypertension, when occurring, was of the Goldblatt type.

Our urologic interest, however, is particularly directed toward the relationship of unilateral chronic atrophic pyelonephritis to hypertension because (1) if there be a direct relationship, and (2) if the diagnosis could be made with the certainty of noninvolvement of the other kidney, nephrectomy would offer the chance of cure. But there are two definite pitfalls in this consideration. First of all, in transposing Goldblatt's experimental results to clinical cases, we must remember that persistent hypertension in dogs occurred only on bilateral constriction of the renal arteries. Only occasionally did the hypertension last for any length of time on unilateral constriction. But even more important is the experimental fact that moderate constric-

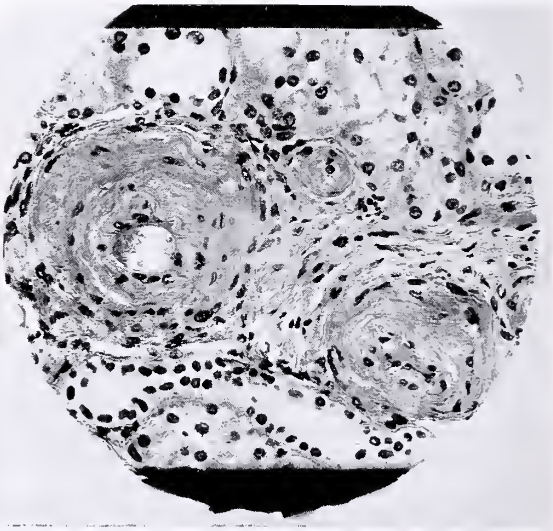
Fig. 1

Read before the Section on Urology of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

From the Urologic Service of the University of Pennsylvania Hospital, Philadelphia, Pa.

tion of the renal arteries in dogs produces hypertension before there is any impairment of kidney function. In the laboratory there is no kidney test for beginning constriction of the renal artery in the dog. We have no test to tell us whether there is early renal vascular constriction in man.

Beginning involvement of the apparently normal kidney would preclude any possible permanent benefit from removal of a destroyed, contracted kidney. This is very likely the explanation why so relatively few cases have been reported in which nephrectomy has apparently resulted in persistent improvement of the hypertensive symptom-complex. But even in the face of this diagnostic uncertainty, there is sufficient experimental and clinical evidence to justify the removal of an atrophic, contracted, pyelonephritic kidney whenever this condition is found to be associated with hypertension provided our present functional tests and urographic studies show the other kidney to be normal.

Case 1

D. L., 28, Male

Chief Complaints	*Past Medical History*	*Chief Findings*	*Treatment*	*Result*
Failing vision, headache; 15 mos. duration	Negative	Retinitis ++++, B. P. 240/180, enlarged liver, functionless left kidney	Nephrectomy	Improvement

Date	*Range of Blood Pressure*	*Blood Urea Nitrogen*	*Urea Clearance*	*Phenolsulphonphthalein (2 hrs.)*	*Addis Count*	*Abnormal Electrocardiogram*	*Orthodiagram*	*Eyegrounds*
June, 1937 preoperatively	240/180 185/120	18	73		Slightly abnormal	+	+	++++
February, 1938 postoperatively	180/120 176/120	19	69	70%	Improved	0	+	++
July, 1939	180/120 172/108	15		67%		0	+	+

Preoperative diagnosis: Contracted kidney (no function on urogram).

Postoperative diagnosis: Pyelonephritic contracted kidney with almost complete occlusion of the main renal artery. Kidney weighed 40 grams.

Comment: The clinical improvement in this case is striking. Preoperatively the blood pressure varied from 240/180 to 185/120. Patient had dyspnea on exertion and was unable to work. Vision was failing. Eyegrounds showed a ++++ hypertensive retinitis.

Postoperative checkup 2 years later revealed that the upper limit of the blood pressure was 180/120, patient's vision had improved, eyegrounds showed but a + hypertensive retinitis, and patient was doing hard, daily, manual labor.

Case 2

W. H., 28, Male

Chief Complaints	*Past Medical History*	*Chief Findings*	*Treatment*	*Result*
Failing vision, headache, dyspnea, edema, nocturia; 12 mos. duration	Bullet wound in left loin 10 years ago	Retinitis ++++, B. P. 218/170, enlarged heart and liver, functionless left kidney	Nephrectomy	Death 3 months after operation

Date	*Range of Blood Pressure*	*Blood Urea Nitrogen*	*Urea Clearance*	*Phenolsulphonphthalein (2 hrs.)*	*Abnormal Electrocardiogram*	*Orthodiagram*	*Eyegrounds*
June, 1939	190/140 240/180	14-16	30-45	35%	+++	++	++++

Preoperative diagnosis: Contracted kidney. Very slight visualization on urogram of left kidney. Good visualization on urogram of right kidney.

Postoperative diagnosis: Pyelonephritic contracted left kidney and sclerotic perinephritis. Renal artery not constricted. Weight of kidney 63 grams.

Comment: Patient died of uremia at home, so no autopsy could be obtained. In this patient we were apparently dealing with a bilateral renal process. Even though the blood urea nitrogen was normal, the phenolsulphonphthalein excretion in 2 hours at the time of operation was impaired.

We were interested in the incidence of unilateral renal disease in hypertension in young or middle-aged individuals. Our study was restricted to those patients who were admitted to the hospital for symptoms of hypertension, who had no urologic symptoms at the time of their admission, and in whom the hypertension was of relatively short duration. Forty-three such patients were given a complete urologic survey and we were surprised to find 4 cases of asymptomatic unilateral renal disease. In each case we made the preoperative diagnosis of pyelonephritic contracted kidney, one case being associated with a silent renal calculus. All 4 cases were nephrectomized. The results are given herewith in tabular form.

Case 3

B. L., 49, Female

Chief Complaints	*Past Medical History*	*Chief Findings*	*Treatment*	*Result*
Dyspnea on exertion (hypertension discovered 3 years ago)	Attack of pyelonephritis (right) with fever and lumbar pain (1939)	B. P. 215/120 Functionless right kidney	Nephrectomy	Improvement
Date	*Range of Blood Pressure*	*Blood Urea Nitrogen*	*Phenolsulphonphthalein (2 hrs.)*	
January, 1940	210/120 225/130	11	60%	
2 weeks postoperatively	150/100			
3 months postoperatively	175/110			
6 months postoperatively	180/110			

Preoperative diagnosis: Pyelonephritic contracted kidney (no function on urogram).

Postoperative diagnosis: Atrophic pyelonephritis with vascular narrowing (Fig. 1). Partial occlusion of renal artery (Fig. 2). Weight of kidney 52 grams.

Comment: Six months postoperatively patient's blood pressure seems to have stabilized itself at 180/110. Further checkups will determine whether this stabilization is permanent.

Case 4

E. H., 54, Male

Chief Complaints	*Past Medical History*	*Chief Findings*	*Treatment*	*Result*
Headaches, attacks of dizziness, blurring of vision; 1 year duration	Right pyelonephritis 18 years ago; passage of gravel per urethra	Functionless right kidney, B. P. 206/118, enlarged liver, right renal calculus, hypertensive retinopathy	Nephrectomy	Improvement

Date	*Range of Blood Pressure*	*Blood Urea Nitrogen*	*Phenolsulphonphthalein (2 hrs.)*	*Electrocardiogram Orthodiagram*	*Eyegrounds*
Apr. 25, 1940 preoperatively	206/118	9	60%	Normal	++
June 30, 1940 postoperatively	164/94				
July, Aug., Sept., 1940	164/94 148/80				

Preoperative diagnosis: Renal stone in a small, contracted, pyelonephritic kidney (no function on urogram).

Postoperative diagnosis: Contracted pyelonephritic kidney (Fig. 3). Renal artery not occluded. Sclerosis of renal parenchymal vessels.

Comment: Patient is symptom-free. Further checkups will determine if hypertension remains improved.

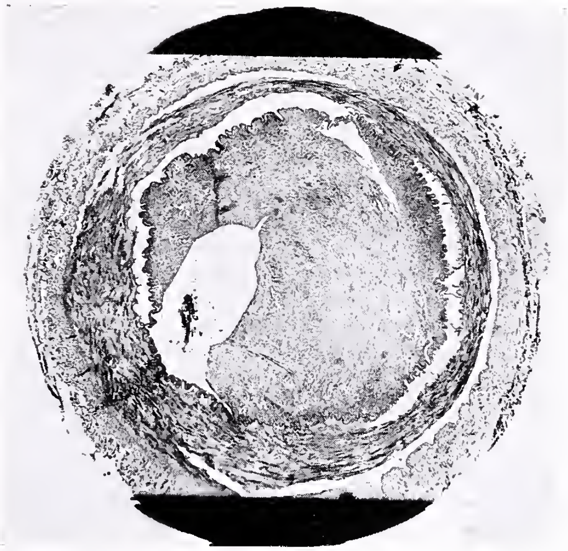

Fig. 2

Summary

1. In 43 cases of hypertension in young or middle-aged individuals, none of whom had any urologic symptoms at the time of their admission to the hospital, 4 cases of unilateral atrophic pyelonephritis were found.

2. The influence of nephrectomy on the hypertension in each of these 4 cases is reported.

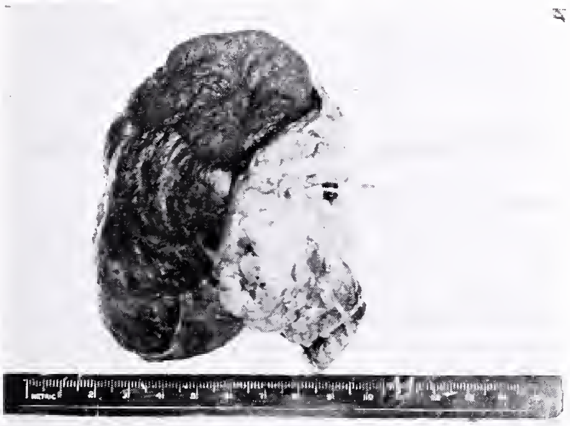

Fig. 3

Conclusion

1. When hypertension is associated with an atrophic contracted pyelonephritic kidney, nephrectomy seems to be indicated if the remaining kidney is found to be normal by our present functional and urographic studies, even though these tests will not certify that there is no beginning vascular disease of this kidney.

2. Improvement of the hypertension following nephrectomy apparently depends on the absence of vascular disease in the remaining kidney.

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ABSTRACT OF DISCUSSION

William C. Hutchison (McKeesport): Dr. Hughes has presented a subject which is most interesting, especially at this time. War hysteria exaggerates hypertension.

About 100 years ago Bright contended that the primary disease is in the kidney and the enlarged heart develops as the renal lesion progresses. Gull and Sutton in 1872 gave us the more modern concept that pathologic lesions in both heart and kidney are secondary to a primary disease of the peripheral arterioles and capillaries. Hypertension undoubtedly is associated with disturbances of kidney function, such as chronic glomerulonephritis. Hypertension may also occur in chronic bilateral pyelonephritis, bilateral congenital polycystic kidney, and unilateral atrophic pyelonephritis. Of course there are times when there is kidney disease without hypertension, and also times when the opposite condition prevails. Bradley and Pincoffs of Baltimore have shown a close relationship between the presence of hypertension and the rapidly growing unilateral Wilms type of tumor. They showed 2 cases in which the blood pressure went down when the tumor was removed. As it recurred the blood pressure went up again. Urologists can thank Dr. Goldblatt who in 1932 experimentally induced hypertension in dogs by first producing ischemia of the kidney. He handed urologists the task of removing the diseased kidney in treatment of certain selected cases of hypertension. His work has been borne out since that time by other work done in this field.

Hypertension is primarily a diffuse arteriolar disease. It can occur without kidney pathology. There is hypertension in eclampsia with slight or no renal involvement. There are many different causes of abnormal increase in blood pressure. The removal of a diseased kidney with the resultant relief of obstruction to the flow of urine may cause a previously elevated blood pressure to return to normal. Two factors must be emphasized in the production of hypertension of this sort—atrophy and sclerosis. Renal insufficiency is not a factor. The back pressure that might result from renal stasis is a factor in producing hypertension only if bilateral. Operative measures such as nephrectomy can be expected to relieve hypertension in approximately 70 per cent of cases of atrophic pyelonephritis. Hypertension is more common in women. The longer the chronic pyelonephritis lasts, the greater the chances of hypertension developing.

Members of this section are familiar with the cases reported from the Mayo Clinic showing improvement in blood pressure in patients who had a kidney removed for atrophic pyelonephritis. Nesbit and Ratliff, of the University of Michigan, reported in the *Journal of Urology* in March, 1940, 9 cases of unilateral inflammatory renal disease with hypertension, of which 7 improved; so it is very likely that there will be an increasing number of cases appearing in the literature where removal of a kidney manifesting atrophic pyelonephritis with a good function in the other kidney will relieve hypertension.

It is important to ask whether essential hypertension is caused by lesions of the kidneys and ureters, or whether there is coexistence of these conditions. We should distinguish renal hypertension from essential hypertension.

S. Harris Johnson III (Pittsburgh): Since the discovery of a pressor substance, speculation on its site of origin has arisen. Goormaghtigh has recently described a probable secretory organ in the kidney which undergoes typical changes in both human and experimental hypertension. This group of cells, of a special structure resembling smooth muscle cells except for their lack of myofibrils, is situated at the vascular pole of the renal glomerulus, in the angle between the afferent and efferent tubules and in close approximation to the second portion of the proximal convolution tubules. It is most interesting that the pathologic change in the second portion of the proximal convoluted tubules which always occurs is the same type of change observed by Irwin Page in his experimental hypertensive animals and attributed to a lowered pulse pressure and leading to the excretion of renin.

Goormaghtigh suggests that there is a close relation between the intercalate portion of the tubule and the juxtaglomerular apparatus. He also suggests that a vasopressor substance may be found in the afibrillar cells of the neuro-myo-arterial juxtaglomerular apparatus, and under certain conditions there may be a liberation of an excess amount of the pressor substance which leads to hypertension. Polychromic granules which are observed in them may actually be secretory granules.

NAVAL APPOINTMENTS AVAILABLE TO THIRD AND FOURTH YEAR MEDICAL STUDENTS

Selective Service registrants who are third and fourth year medical or dental students in Class A schools and who are physically and otherwise qualified are eligible for appointment as ensigns in the volunteer, probationary Class H of the Naval Reserve, Dr. William Mather Lewis, State Director of Selective Service, announced recently.

The director said he had been advised by National Headquarters that it is the intention of the Navy Department not to order ensigns H-V (P), USNR, to active duty assignments prior to the completion of their undergraduate medical or dental education.

Furthermore, he asserted, it is also the intention of the Navy Department, providing the exigencies of the service permit, to have those ensigns H-V (P), USNR, who are reappointed lieutenants (junior grade), MC-V (G), USNR, upon graduation, to complete one year's internship before assigning them to active duty.

Ensigns H-V (P), USNR, upon submission of evidence of graduation, are reappointed as lieutenants (junior grade); medical graduates in Class MC-V (G), USNR; and dental graduates in Class DC-V (G), USNR, without professional examination, Dr. Lewis pointed out. Ensigns H-V (P), USNR, for Medical Corps duties, after successful completion of their junior year in medicine, may request examinations, including professional, for appointment as Acting Assistant Surgeon (intern) in the U.S. Navy, effective upon graduation from medical school.

To be eligible for appointment as Ensign H-V (P), a statement from the dean or other official of the faculty of the institution at which the candidate is in attendance to the effect that the candidate is in good standing and eligible to enter or has entered the third or fourth year of medical or dental education, without condition, is necessary.

All applications for appointment in the Naval Reserve must be forwarded to the Navy Department via the commandant of the naval district in which the applicant resides. Application forms and additional information regarding such an appointment may be obtained upon request from the Commandant or the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

Interns who are Selective Service registrants and who are graduates of Class A medical schools may apply for appointment in the Medical Corps of the Naval Reserve as lieutenants (junior grade) as outlined.

FIRST DAY OF ANNUAL CONVENTION

Strange as it may seem to veteran attendants upon the annual conventions of our State Medical Society, Tuesday morning this year offers one of the most varied and interesting series of instructional programs of the entire week. Tuesday, Oct. 7, should prove to be a great day at the 1941 convention what with its morning program of special interest to physicians engaged in so-called draft board (registration board) physical examinations of selectees, other programs for general practitioners, and its programs in dermatology, clinical laboratory medicine, and urology.

It will seem strangely busy, by contrast, to those wise enough to register on Monday or early Tuesday morning, compared to the Tuesday mornings prior to 1939 when Tuesday mornings offered only the opening general session with the presidential address.

In addition to the above, Tuesday this year has afternoon sectional programs in medicine, surgery, pediatrics, obstetrics and gynecology, and clinical laboratory medicine, and, as in 1939 and 1940, provides during the evening the program for the induction of the new president, the delivering of his address, and an hour following which will be packed with good entertainment including a one-act play staged by the famous drama school of the Carnegie School of Technology, music by a mixed chorus, and other artistic performers.

Experience With Routine Contraceptive Advice to Ward Maternity Patients

OWEN J. TOLAND, M.D.
Philadelphia, Pa.

THE fact that instruction in child-spacing technics has become a recognized part of ethical medical practice, particularly maternity practice, is no longer a matter of controversy. This paper will attempt to set forth our experience in the matter of attempting routinely to take care of the child-spacing necessities of our ward patients in the Maternity Department of the Hospital of the Protestant Episcopal Church in Philadelphia. This department actually started to function in 1932, and it was my feeling, in which I was supported by my associates, that there was no logical reason why we should regularly give contraceptive information for child-spacing purposes to our private maternity patients as an integral part of their postpartum care, and ignore the fact that such a need existed in our ward charges.

Those of us who had experience in fitting diaphragms were inclined to feel that instruction in this method was too cumbersome and time-consuming to be made a part of the routine postnatal visit which we advised for all ward patients. The work of Irving Stein seemed to indicate that roughly 85 per cent of women are protected from pregnancy by the use of a contraceptive jelly alone, if applied paracervically deep in the vagina. This method had the additional advantage of being easy of explanation and requiring no detailed manual training of the patient. We, therefore, embarked upon this régime with the feeling that, if we prescribed a method 85 per cent effective to all patients, our net results would be far better than if we attempted to fit diaphragms at tremendous inconvenience to ourselves, with the certain knowledge that many of the patients, probably as high as 50 per cent, would not take the trouble to use them.

Our initial step in instituting this régime was to acquaint the patients with the fact that child-spacing advice was available to them in a postpartum clinic. We picked the occasion of their discharge, following confinement, from the hospital for this announcement. We even ventured to hope that such a stimulus might result in better attendance than is usual. A follow-up clinic is never popular. At the risk of repetition, let me quote from our department technic book:

> It is the belief of the staff that advice in child-spacing technic is a definite part of our obligation in the routine postpartum care of our ward patients. The maternity intern will, therefore, see to it that all patients are to be informed that such service is available to them at their postpartum follow-up visit. Should the patient not desire such advice, it is not to be urged upon her; and if any intern objects to this duty on moral grounds, some other agent will be appointed.

I make this quotation to show that it is not our intent to trample upon the susceptibilities of either our patients or interns, or to ram birth control down unwilling throats. The policy described, I think, has been carried out reasonably faithfully by both the interns and staff members working in the postnatal clinic. At the end of 5 years we felt that sufficient data had been accumulated to justify a critical view of the results.

The difficulty of obtaining accurate information on an intensely personal topic of this kind is obvious. It is hard enough even with private patients. With ward patients I felt that a mailed questionnaire would produce nothing but misinformation. Personal interviews seemed to be the only solution. We were fortunate in securing the service of two energetic and intelligent young married women, both with young children, who were sufficiently interested in our work to volunteer. I cannot speak too highly of their energy, intelligence, and tact in planning and conducting these interviews, which all took place in the patients' own homes. In two instances only was an interview refused. The way for them was paved by a form letter sent out by the department, stating that a representative would call to discuss the use of the jelly.

At the time our investigation started there were approximately 3000 patients who had been

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Read before the Section on Obstetrics and Gynecology of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

Table I

No. of patients discharged who could have received jelly	3000
Those who actually received jelly	739—26.5%
Those apparently not sufficiently interested to get jelly	2261—73.5%

delivered in the Maternity Department who might have availed themselves of our child-spacing service. We took for follow-up purposes no patient who had not been given jelly at least one year before our study began. From this group of potentials, the records showed that 739 had actually taken jelly in the follow-up clinic, but of these only 486 were sufficiently well written up to justify attempted contact. From this group of cases personal contact was actually made in 242 instances. These contacts required an average of two calls apiece, and change of address presented a frequent difficulty. All in all, the follow-up was an arduous undertaking which occupied over a year's time.

It seems safe to assume that the utilization of our method would be found to be the result of two factors, the first of which would be the zeal of the staff, both intern and extramural, in making the method available to the patients; the second, the desire of the patients themselves for such service. I feel sure that our staff took this obligation as seriously as one could reasonably expect. Table I shows our results.

It was my feeling that contacts should be divided into 3 rough groups, based on their acceptance of the method prescribed. In this study the method, as already stated, was the use of contraceptive jelly alone.

Group 1 consisted of those who invariably used the jelly, either with or without supplementary means. Group 2 was composed of those who used it sporadically. Group 3 was the remainder, and is composed of those who, although they took a tube of jelly, either never used it at all or after a few trials gave it up. A different type of blank was filled out for each of these groups and, although there can be no very rigid differentiation between them, due to the highly subjective nature of the matter under consideration, we feel that they are reasonably representative of the patients' reaction to our efforts. We thought it might throw some light upon the acceptance of the method if the patients' intelligence, religious status, and reaction to the marital relationship were gone into. But, though this was performed in each case, the results obtained did not show any significant difference between the 3 groups. Our results are shown in Table II.

Table II

		Total	*Per Cent*
No. of patients actually contacted	233		
Group 1:			
Invariable users of jelly alone	35		
With some supplementary method	32	67	28.7
Group 2:			
Sporadic users	13	13	5.5
Group 3:			
Patients who never used jelly at all	72		
Used a few times, varying from once or twice to a month	81	153	65.8

In view of the high percentage of non-users, I think it is of interest to note the most frequent reasons given for this lack of response. These are shown in Table III. They are, of course, more varied than the table would indicate, but it shows the most frequent in order of their occurrence. I think, to a certain extent, the failure of our patients to use the "prescribed method" reflects the fact that the staff itself did not have great confidence in the protective powers of jelly alone.

Table III

Total	*153 Cases*	*Per Cent*
Group A: Those who never attempted to use the jelly	72	47
Most usual reasons:		
"Didn't trust it."		
"Husband takes care."		
"Satisfied with condom."		
"Against our faith."		
"Just didn't bother."		
Group B: Those who need it only a few times	81	53
Most usual reasons:		
"No confidence."		
"Messy."		
"Heard it hadn't worked."		
"Too much trouble."		

The methods used as adjuncts or substituted tally closely with the findings of Dr. Marie Warner in her recent article on contraception. As in her series, we found the condom to be the most popular substitute, approximating 50 per cent. "No precautions" and "withdrawals" counted for roughly 20 per cent each, the remaining 10 per cent being divided between the use of the safe periods, suppositories, and a pessary.

The most arresting fact in the study is brought out by a comparison between the group that used the jelly invariably and those who never used it, or only very briefly. These are shown in Table IV. We interpreted these findings, in which there is a surprising absence of any significant difference between the two groups, as indicating that, by and large, all our patients were already using fairly effective means of child-spacing, the group not following instruc-

Table IV

	Average Age (Years)	*Average Years Married*	*Average No. Children*	*Average No. Children Per Year of Married Life*
Group 1 (invariable users).....	29.5	8.75	2.57	.294
Group 3 (never used or only briefly)....	28.7	7.8	2.2	.293

tions being on a parity with those who followed them meticulously. In view of this finding, we felt very definitely that a change of policy was in order. The undesired pregnancies occurring since instruction are shown in Table V. We were helped to arrive at this conclusion also by the opinion of our follow-up agents, who informed us that they sensed in many of their interviews that our patients simply did not take the prescribed method seriously.

Evaluating the facts, as disclosed by this review, led us to the conclusion that we had been overly solicitous in our effort to be of service to all of our ward patients with respect to "birth control" and that we were in error in not offering them the most reliable method. Accordingly, we have changed our policy in such a way as to put the burden of responsibility for coming for such advice more squarely on the patients. They are still told, on discharge from the hospital, that such advice is available in the postnatal clinic, but at their first postnatal visit they are told that they must make a subsequent visit if they desire instruction in contraceptive technic. At that visit, when, as, and if they make it, they are taught the use of a diaphragm combined with jelly. We feel that this modus operandi reduces the applicants to those really interested, and we have been fortunate in securing the services of a female physician who attends one clinic hour weekly for the specific purpose of fitting diaphragms. To date, from a potential group of 487 discharged patients, 91 have applied for instruction, and we assume the results will be comparable to those already established by many published studies of the effective uses of the diaphragm method.

Table V

Undesired Pregnancies Since Instruction

	Cases	*Per Cent*
Group 1 (who followed method religiously)	5 in 67	7.46
Group 3 (who never used method or only briefly)	12 in 153	7.84

I think it is not out of place to mention that we also recommend the book, *Rhythm,* by Dr. Leo J. Latz, to all patients who express interest in child-spacing technic but whose religious beliefs prevent them from accepting a mechanical method. Further, we do not hesitate to recommend, and perform if they desire it, tubal ligation shortly postpartum in a very limited group of patients in whom we feel that there is a permanent contraindication to further child-bearing.

Conclusions

Instruction in child-spacing technic has a definite place in the routine care of ward maternity patients.

In our experience the demand for instruction in modern technic is neither as widespread nor as insistent as might be supposed.

The method recommended should have the unqualified endorsement of those who prescribe it.

In a small group of patients in whom all future child-bearing is contraindicated, bilateral tubal ligation performed shortly postpartum offers the best result for ward patients.

ABSTRACT OF DISCUSSION

Thaddeus L. Montgomery (Philadelphia): One of the impressions gained as we listened to this paper, which has to do with the effort to elevate the human race, is the infallible fallibility of human nature, and the truth of the old adage that you can lead a horse to water, but you can't make him drink. However, I wish to commend Dr. Toland for his dealing so honestly and so judiciously with one of his favorite children.

Why Dr. Toland asks me to discuss this paper I do not know, though I have some suspicions. In the first place, he knows that I will not agree with him, and he likes an argument; in the second place, he informed me some time ago that when he had me discuss a paper, it lent an atmosphere of respectability to the subject. I think that is a dubious compliment in this day and age. Third, one of the reasons why he has tossed this last little bit of dynamite into my lap is because I have just taken on a new department and he is curious to know what I am going to do about this problem of preventability in my clinic.

All of which leads to the question of what is the responsibility of an obstetric clinic in reference to child-spacing and the prevention of future pregnancies. I think I can answer that in unmistakable terms and very quickly.

An obstetric clinic is responsible for the proper care of its patients, for their safe conduct through pregnancy and labor, and for the restoration of the patient's health to its previous condition, the condition in which the obstetrician found it, or, if possible, to a better condition. In the second place, it has a duty in instances of profound and serious systemic diseases, such as heart trouble, tuberculosis, and nephritis, and in certain other conditions in which it is well recognized that repeated pregnancy is productive of poor health, to advise such patients that they should avoid future pregnancies.

Under these circumstances, such patients should be instructed either in contraceptive measures—and I think it is justifiable to do that in the clinic itself—or they should be treated by the operations described by Dr. Toland—tubal ligation or other methods providing more permanent sterilization.

Beyond this, I do not think it is the business of the hospital clinic, and certainly of the medical school, to instruct their students and nurses. Those patients who, for economic reasons or social reasons, desire to avoid childbirth, may find their way to the clinics in which groups of people have become concerned about child-spacing, prevention of conception, and what not.

The business of a hospital and a medical school is with the patients' health. Let it be the business of other social groups to be concerned with matters of economic and social welfare.

NORMAN L. KNIPE (Philadelphia): Dr. Toland has always been very interested in birth control. In fact he has always taken a rather fanatical interest in it. I am surprised that he did not have a chart showing his statistics on unmarried women as well as married women, because I think that some of his propaganda and discussion is to the effect that sexual intercourse is almost as common among unmarried people at the present time as among married people.

I have no objection to birth control. In fact, a good many years ago, when it was talked about with great trepidation, I got up at a meeting of the Obstetrical Society of Philadelphia and voiced my approval of birth control. But age gives a little conservatism and common sense, and I would respectfully suggest that all you people in attendance here read a recent article, in either the September or October number of the *Reader's Digest,* by Alexis Carrel, which reveals that births and deaths in this country are becoming almost stationary and birth control has become a dangerous thing.

As a result of this propaganda, our better class of people are not breeding, but the underprivileged people *are* breeding. If, in Dr. Toland's Table III, he had put his fourth classification first under Group B, that is, "too much trouble" to use this birth control jelly, he would have come closer to what occurs among the very class of people in whom we should like to further the idea of birth control.

It would be very much better if gynecologists and obstetricians in various clinics for that purpose would become interested in the question of sexual compatibility in domestic life, which causes so many of our divorces. Maladjustment in married life requires a great deal of advice and nobody seems to take very much interest in it.

I am very much opposed to this propaganda about birth control, not from a religious standpoint, but simply from an economic standpoint. And yet, I agree with Dr. Montgomery in saying that I have no objection to birth control when it is properly done and directed toward people who really need it.

DR. TOLAND (in closing): I might say that I am rather indebted to my most recent discussor for having put one phase of the problem very clearly. It is quite obvious that many people of the better class are not doing their full duty as far as having children is concerned, and it is equally obvious that the underprivileged are not being given the same privilege to abuse. But this is rather beside the point.

I am perfectly willing to admit that the upper classes are not performing this function toward society as well perhaps as they should. Is that any reason for withholding from the underprivileged the information that the privileged can and do receive as a legitimate part of medical service?

In other words, if we are going to perform such service, as Dr. Montgomery very generously admitted is necessary, in cases with organic disease, where I ask is the proper place to perform that service? Is it in some clinic unsponsored by the medical profession that represents nothing but the opinion of a few fanatical people, possibly like myself? I cannot help but feel that if we have patients to treat, why not treat them ourselves in our own institutions? If our ward patients need such service, why don't we perform it in our own maternity units? Why should we have to send such cases to some extramural contraceptive clinic of whose unauthorized status we fundamentally disapprove?

This in the main is my answer to criticisms that I have heard. Every time the subject of exercising this legitimate responsibility comes up, there are always a number of people who say, "Doctor, if you do anything of this kind, there will be a great deal of trouble!" I have noticed that people who talk that way invariably expect somebody else to make the trouble.

Let me say, to encourage those who perhaps feel more sympathetic to my point of view than my discussors, that up to date we have given such service as a routine in our maternity organization without any disturbance, without any talk in the hospital, without any perversion of our interns or nurses, or, judging from the records, without any detriment to our patients; in short, without any trouble at all.

MAKE HASTE SLOWLY

Medicine is closely related to social science because both are intimately concerned with the welfare of the human race. In the advancement of each, the other must be carefully considered. It would be short-sighted for either to take steps while ignoring the other. They must go hand in hand to promote lasting success in any new program.

One of the greatest enemies of progress can be ascribed to the tyrannies of established custom, and yet all progress is dependent on the propensities to variation. We must be tolerant, then, of the nonconformist who advocates change in the prevailing usage of our times. We do not here and now take sides in the conflicting attitudes expressed on socialized medicine. That the viewpoint of many high-minded physicians has been undergoing a change in recent years must be apparent to all observers.

When it comes to principles of ethics, the profession cannot compromise, but neither can it ignore the growing demand for an improvement in the distribution of medical care to all our citizens whether it be called by the name of social medicine or not. There must be some way of working this out and still retain the confidential relations of physician and patient. Organized medicine has done much well-intentioned work in this direction, but annual meetings are far apart and there is an element of danger in delay. On the other hand, there is danger in haste because the individual must do his share of planning.—*The Journal-Lancet.*

Several Interesting Pathologic Hearts

MELVILLE A. GOLDSMITH, M.D.
Jenkintown, Pa.

WE USUALLY watch all the necropsies, whether or not these cases have had a diagnosis of any congenital heart condition, in order to pick up things that we have missed clinically. I have a few hearts here of some patients we have seen. Sometimes that diagnosis has been right; just as many times it has probably been wrong.

In this jar is the small heart of a child 9 months of age who had congenital cardiac hypertrophy after infarct. The large one on the left is that of a 5-weeks-old infant who had congenital cardiac hypertrophy and died of bronchial pneumonia. A diagnosis of congenital cardiac hypertrophy was made clinically. This heart appears to be perfectly normal, and is without the usual earmarks. Very often we find the coronary artery coming from the pulmonary artery, but in this case the coronaries came from the aorta in the proper way.

What one of the speakers said about congenital heart disease in relation to various types of abscesses over the body is quite true, particularly in many cases where one is apt to find paradoxic emboli, common in patent foramen ovale; and if there is a blood stream infection, the emboli go into the systemic circulation.

This is the heart of a child 6 or 7 years old. You will notice the large opening, the size of your finger, in the ventricular septum. The child was treated in the cardiac clinic 3 or 4 years ago. He began to develop symptoms of rheumatic infection. He had badly diseased tonsils, which we thought desirable to have removed. It was finally decided to perform the operation regardless of other symptoms, but during the operation, the boy stopped breathing and died. There is really no reason why this patient should not have survived the operation. The ventricular septum cases as a rule stand anesthesia and go through the average tonsillectomy rather well. In this case it was not so. The interesting point is that this boy already had evidence of rheumatic infection on not only the mitral valve but also the aortic valve. His future in any case would have been very much restricted even if he had survived the tonsillectomy.

Here are 3 more hearts that were secured at necropsy. As you know, probably 40 per cent of the cases that come to necropsy have a slight opening in the foramen ovale, not enough to diagnose clinically, but enough to call an opening.

Here are 2 more hearts that are especially interesting to me because they belong to the true cyanotic group, both of them transpositions of the great vessels. The aorta comes from the right ventricle and the pulmonary artery from the left ventricle.

Here is a third specimen of transposition of the great vessels plus a patent ductus arteriosus and a widely open foramen. Cases of this kind have been reported before. The only way such patients can live is to have some back door for ventilation, either a patent foramen ovale or a patent ductus arteriosus, one or both.

This heart that I am showing you now was that of a child who came to the hospital this past July with bronchial pneumonia, or at least some respiratory infection, and a cardiac consultation was requested. We saw the child and thought possibly it was a case of situs transversus. We made this diagnosis and sent the child for an electrocardiographic tracing. When the report came back, it did not substantiate the diagnosis. It was not a true situs transversus, that is, it did not conform to the usual type of electrocardiogram. The interesting thing about it is that the true diagnosis was made by x-ray, but how it was done I am unable to tell you. I wish the roentgenologist were here to explain it.

You will note from these films that it looks as if the apex of the heart was over on the right side. All clinical findings so pointed, but the electrocardiogram did not. Necropsy disclosed a trilocular heart. There is a one-chamber ventricle, no septum, and an opening in the upper part of this common ventricle into a miniature pulmonary artery.

This child was 6 weeks of age. The average age is 2 to 4 weeks. I think one case has been reported in which the child was 3 months of age.

Read before the Section on Pediatrics of The Medical Society of the State of Pennsylvania, Philadelphia Session, Oct. 1, 1940.

Lewis Taylor Buckman

President-Elect

THE ninety-second president of The Medical Society of the State of Pennsylvania, Lewis Taylor Buckman, was born in Wilkes-Barre in 1896. His parents were Dr. Ernest U. Buckman and Elizabeth (Thompson) Buckman; both families were originally from Bucks County.

Dr. Buckman's choice of medicine as a career made his the third generation to practice in Wilkes-Barre. His brother, Samuel T. Buckman, M.D., also upholds the family tradition in that city.

Dr. Buckman's early education was obtained at the Harry Hillman Academy, from which he was graduated in 1912. He attended the Massachusetts Agricultural College and received the degree of B.Sc. in 1917. In 1918 his studies were continued at the Oregon Agricultural College.

Following his graduation from the University of Pennsylvania School of Medicine in 1922, he interned at the Episcopal Hospital, Philadelphia.

Since 1924 Dr. Buckman's practice has been limited to ophthalmology and otolaryngology. He is a diplomate of the National Board of Medical Examiners, and he was certified by the American Board of Otolaryngology and the American Board of Ophthalmology.

Dr. Buckman has been librarian of the Luzerne County Medical Society since 1928 and is a member of the Medical Library Association. He was editor of the county society bulletin from 1928 to 1939. A member of the staff of the Wilkes-Barre General Hospital, he is also bronchoscopist on the consulting staff of the Pittston Hospital and the Nesbit Memorial Hospital.

His interest in local medical affairs branched out naturally into activity in the State Society. Dr. Buckman has served on the Advisory Committee to the Woman's Auxiliary and the Committee on Medical Economics.

The mere listing of societies in which Dr. Buckman has a membership is terse evidence of his varied interests: the Lehigh Valley Medical Association; the American Academy of Ophthalmology and Otolaryngology; the American Laryngological, Rhinological, and Otological Society; the American Broncho-Esophagological Society; and the New York and New England Association of Railroad Surgeons. His fraternities are Theta Chi, Alpha Mu Pi Omega, and Phi Kappa Phi.

Dr. Buckman married Abbie Lee, of Kingston. There are three children, Ernest U., 2d, Phebe, and Abbie.

Lewis Taylor Buckman, M.D.

THE PENNSYLVANIA MEDICAL JOURNAL

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EDITORIALS

COME TO PITTSBURGH

You will not get a gold star pasted after your name for attending the ninety-first annual session of the State Society to be held in Pittsburgh, at the Hotel William Penn, from Oct. 6 to 9, 1941, but you will get a wealth of information.

The Committee on Scientific Work has prepared a most excellent program for you. Turn to page 1609 and read the complete scientific program carefully. There is not a member of the State Society who cannot find something in the program to interest him. Let your interest develop into enthusiasm and be among those present in Pittsburgh on Oct. 6.

In 1867, at the first Pittsburgh convention of the State Society, you could not have found the scientific exhibit with a microscope. In 1941 you will be able to see the scientific exhibit without even a squint. Forty-six exhibits have been arranged for your pleasure. You will never regret a visit to this outstanding display of medical research.

No convention is complete without a technical exhibit. This year you will see the largest technical exhibit ever presented at a Pittsburgh meeting of the State Society. If you will read the description of each exhibit (page 1629), you will find that there are going to be many things displayed that you have been wanting to see for some time. The exhibitors will be grateful for every minute you spend with them.

All of the time you spend in Pittsburgh will not be scientific—social functions will also have their part. For the golfers, the annual golf tournament and dinner will be held at the South Hills Country Club, Route 51, on Monday, Oct. 6. On Tuesday evening the Inaugural Meeting, followed by an hour's popular entertainment, will be held in the famous Carnegie Music Hall. Alumni dinners will be held previous to the reception and dance in honor of the incoming president on Wednesday night.

Come to Pittsburgh and you'll never regret it. Bring your wife along, too. The Woman's Auxiliary has prepared a very interesting program. It is on page 1717.

Write today direct to the hotel of your choice. The room rates are published on page 1622.

A. H. S., JR.

* * *

LAW ENFORCEMENT ENDS HOSPITAL STRIKE

In our favorite afternoon newspaper we read recently on a mid-August day two strikingly connected items: First, not unexpected news to the effect that the West Penn Hospital (Pittsburgh) employees' strike had been ended; second, nationally speaking, that the current administration has "given union leaders a clear license to persecute millions of the people and to riot against the public peace and private business and this license was defended as 'labor's gains,' even when union bosses struck against the works that were trying to produce weapons and equipment for men drafted into the armed forces."

The notorious hospital strike, inaugurated by a union of CIO state, county, and municipal workers and dragged on for 4 months marked by picketing, rioting, and other forms of open defiance of a court's orders, carried on with city police or county sheriffs' representatives within eye-witness distance, was finally ended without recognition of the union and by the final acceptance of terms proffered by the hospital management before the strike began.

The terms accepted were: (1) wages of the service employees will be raised as soon as sufficient money is available; (2) the employees may choose a committee of their own representatives who shall have the right to meet with the hospital management at all times; (3) the hospital agreed to rehire at once at least 25 of the former 350 employees, banning any individual who violated the court's picketing injunction.

Need one ask what led to the conclusion of this disgraceful demonstration of the politicians' fear of organized violence with city and county primaries and subsequent election in the immediate offing? Needless to repeat the not unusual experience of strike leaders with jail records, rioting incited and led by out-of-town professional union men had been repeated in Pittsburgh and continued until leading strikers arrested, fined, and released more than once were finally held in jail (3 weeks) while friends or supporters scurried about seeking for each a $5000 bail bond to hold the peace. In the vernacular of the day, $5000 per head "ain't hay" even for organizations that completely ignore any sense of responsibility for the fate of fellow human beings ill or injured and dependent in considerable degree for many of the facilities manned and distributed by orderlies, maids, laundry employees, etc., employed in a large modern general hospital.

Undoubtedly the people of Pennsylvania and adjoining states are obligated to the employees of the West Penn Hospital who remained loyal to its courageous managers; to its self-sacrificing professional staff; to the fearless judge; and to those who finally applied the long-existing laws for the disciplining of hoodlums.

For the benefit of readers who may wonder why the national administration is brought into our discussion of a demonstration of tragic neglect by city and county government officials, we quote as follows from a recent Pennsylvania Medical Journal editorial, "Missing the Point":

"How many young men from other walks of life who are sacrificing earned income and advancement in private industry while in the nation's service, look with confidence into the future, while various governments—city, county, state, and national—permit those who remain at home to wreck through greed, by means of modernized organization law-breaking activities, the best-laid industrial plans for national defense?"

VISUAL AIDS TO INSTRUCTION

Breathes there a reader of the Journal too old or too young to remember first impressions gained from the grade school teachers' writings or drawings on the blackboard?

By the same token, is there a reader of the Journal who has not in more recent years been aroused from a state of lethargy superinduced by the droning voice of the reader of a "scientific paper," with eyes glued to his manuscript and voice trailing off in indefinite sentences, when the soporific essayist, happily concluding, was immediately followed on the program by an instructor making graphic use of pointed lantern slides thrown on a screen, or, better still, a dramatized version of his topic screened by a silent or sound "movie" film?

That this modernized method of appealing at once through the vision as well as the hearing of an audience made up of persons gathered to revive forgotten or to gain new knowledge is now recognized and adapted to the needs of the membership of county medical societies is set forth in this issue of the Journal, not only in the report to the 1941 House of Delegates of the Committee on Public Relations but in the appended excerpts from a report prepared on request for readers of the Journal.

In addition to the Lackawanna County Medical Society, we are informed that similar steps have been taken by the Schuylkill County Medical Society. If there are other county societies similarly equipped, we shall be glad to report the fact in subsequent issues of the Journal.

The use of these sound projectors, as will be learned by a careful reading of the following brief paragraphs prepared by Dr. Frederic B. Davies, editor of the *Lackawanna County Medical Society Reporter,* is not only adaptable to audiences large or small, professional or lay, but is greatly facilitated by the availability of excellent films which may be rented or purchased.

Sound Projector Purchased for Visual Education Program

Recently the members of the Lackawanna County Medical Society have enjoyed a new departure in graduate medical education. Although Lackawanna County Medical Society has held weekly scientific meetings for the past 30 years, the members had felt for some time that certain phases of visual education in the sound and silent motion picture field should be made available.

A committee of the society purchased an up-to-the-minute film sound projector which will show 16 mm. sound or silent films. The sound unit is powerful enough to use in the largest high school auditorium and is also equipped with microphones for a portable public address system. In addition, a powerful slide projector was purchased to replace an old unit.

The Lackawanna County plan for visual education was twofold in scope: First, to make available to the members selections from the hundreds of scientific films, sound and silent, full-color and black and white, which may be rented or obtained on loan. These were to be shown as part of the regular scientific program under the control of the program committee. Second, to provide similar films, which are available for lay education, as part of the program of the Committee on Public Relations for dissemination of medical facts to the public.

The motion picture program is planned to occupy 30 minutes prior to the opening of the society's regular scientific program, from 8:30 to 9 o'clock.

A post card poll of the members was taken to ascertain which subjects in the fields of medicine, surgery, and the specialties promised to be of greatest interest. From 100 cards returned the leading requests were: endocrine disease (42); cardiology (33); anemia and blood dyscrasias (32); obstetrics and gynecology (29); chemotherapy (28); neurologic problems (23); nephritis (23); minor and traumatic surgery (22); and medicolegal problems (20). Impressions from this poll have been adopted in planning both the usual and the motion picture programs for various meetings of the society.

As the state law requires that only licensed operators may operate 16 mm. sound projectors, the chairman of the society's projection committee and his two assistants took a special written examination given at Scranton by the state inspector. All passed and were licensed upon payment of a fee ($2.00). The license is for a nonprofessional operator and is not subject to control of the operators' union.

The 8:30 p.m. "film" program has proved an aid in bringing out the members in time for the opening of the regular meeting. Attendance at the motion picture program has been fair. Special programs are planned for the fall meetings, such as a 9-reel Symposium on Cardiology sponsored by the American Heart Association.

The new projectors have been in constant use since their purchase, and local parent-teacher audiences, fraternal groups, high school assemblies, and members of the student bodies of the University of Scranton and the Scranton-Keystone Junior College have enjoyed visual instructional programs supplied by the Lackawanna County Medical Society.

JOHN J. SHAW, M.D.

M.D., University of Pennsylvania, 1908.

Sc.D., University of Pennsylvania, 1941.

Dr. P.H., Temple University, 1941.

Strittmatter medalist, Philadelphia County Medical Society, 1940.

Secretary of Health, Commonwealth of Pennsylvania, 1939-1941.

American Public Health Association scroll for outstanding achievement, May 28, 1941.

Licensed to practice medicine: Rhode Island, 1908; Pennsylvania, 1910.

Fellow of the American College of Physicians, 1939.

Died in Harrisburg, Pa., June 24, 1941.

Survived by his wife, Beatrice Vare Shaw, and two sons, aged eight and two years respectively.

Voted by his class in the medical school the "wittiest" and also the "most original" member of the class, he thus early displayed some of the qualities that in later life brought him recognition and rank among those leading the advance of preventive medicine. The Governor of Pennsylvania attested to this when he stated, "He combined cheery and optimistic personal charm with great achievement as a public health statesman. His administration of the Health Department will go down as the most brilliant in its history."

After his internship at the Episcopal Hospital, he continued his association there in surgery with the late Dr. Harry C. Deaver at the Kensington Hospital for Women, and at the Mary Drexel Home of the Lankenau Hospital. His close personal friendship also with the famous surgeon-brother, John B. Deaver, brought him much wisdom which he deeply valued in later life.

During the World War he was chief surgeon at the American International Ship Building Corporation at Hog Island. At that time, during the influenza epidemic of 1918, he administered to hundreds of cases and received a special award for his phenomenally low mortality rate.

At the close of the war he returned to general practice, which eventually included his becoming house physician to the Warwick Hotel, the Barclay, and the Chateau Crillon. Thus, practically all of his professional life centered around the City of Philadelphia, and his beneficial kindness made of every patient a lifelong friend.

When Governor James announced the appointment of John Shaw as Secretary of Health in his cabinet in January, 1939, it was only a surprise to the profession outside of Philadelphia, who did not know of his crusading spirit and his years of interest and endeavor in connection with the Philadelphia Department of Health. Particularly was this evident in his interest and work in the early years of active diphtheria control.

When he began the duties of his office his first public announcement was his determination to put the Health Department where it rightfully belonged—in the hands of the medical profession. In his first week he announced that the public was going to receive full value in health for all expenditures in the future. In a short time it became apparent to all observers that he took the office with seriousness and energy. It was apparent—here was a dynamic man with a high standard of professional knowledge and an unswerving determination to make health, both private and public, the paramount goal of his administration. He announced publicly time and again that he was going to make Pennsylvania's Department of Health the greatest and most efficient in the nation. He called into consultation the leaders of the profession. He discussed intimately his problems and hopes with the leaders of our medical schools; he drew to him leaders of various special health societies such as those for the prevention of cancer and tuberculosis, as well as the forces fighting venereal and other communicable diseases. In a remarkably short time he had every detail of the many branches of the department at his finger tips. The personnel were encouraged with assurance of authority and support and in a short time that mysterious force called "morale," without which no organization can succeed, had spread throughout the department, with every employee enthusiastically feeling that on him or her depended success or failure. Here was dynamic leadership.

Neither space nor time would permit the recital of the various accomplishments of the Department of Health of the Commonwealth—suffice it to say that Secretary Shaw's expansive programs were really working, and his consistent devotion to health began to attract nationwide recognition. From states west and south came health representatives to Harrisburg to meet him and to study the programs which had gained national renown. Surgeon-General Thomas A. Parran of the U. S. Public Health Service joined in the acclaim. Leaders of industry, quick to appreciate his phenomenal achievement in improving the health of mass workers, made him tempting offers to enter the field of industrial medicine. He declined them all stating "I have a job to perform right here."

Appreciation of his rapidly developing leadership was first made publicly evident at a dinner tendered him in April, 1940, at the Union League in Philadelphia, followed by a glowing reception received at the 1940 annual dinner meeting of the Allegheny County Medical Society at Pittsburgh, attended by over 1000 members of the profession.

Later the Philadelphia County Medical Society awarded to him the coveted Strittmatter Medal for the most outstanding service of the year. Then in June, 1941, two great universities added their public recognition of his outstanding work by conferring upon him "causa honoris" the degrees of Doctor of Science and Doctor of Public Health.

He was an ardent foe of so-called socialized medicine. Mixed with genuine sociability, Dr. Shaw pleaded a forceful case and until his death never gave up this fight.

Many an individual, to whom his name will never be known, will owe him a debt of gratitude for well-being and prolonged life.

The late winter and spring of 1941 was a period of strenuous work and great anxiety for Dr. Shaw. He had many projects in mind that needed legislative approval for their ultimate success, and he gave to them his every effort. One of these was the extension of Civil Service regulation to the Health Department, a development which would have been one of the most important steps ever taken by the Pennsylvania Department of Health.

The Pennsylvania Medical Journal salutes the memory of a distinguished physician and public health administrator. T. S.

SCIENTIFIC PROGRAM

Ninety-first Annual Session

PITTSBURGH, PA., OCTOBER 6 to 9, 1941

GENERAL MEETINGS

Installation Meeting

Tuesday, October 7, 8 p. m.

CARNEGIE MUSIC HALL
FORBES STREET, SCHENLEY PARK

Reporter—MRS. LAURETTA B. WEARY, 51 Madison Ave., New York, N. Y.

Call to Order by the President.
FRANCIS F. BORZELL, Philadelphia.

Invocation.

Report of Committee on Necrology.
M. FRASER PERCIVAL, Philadelphia, Chairman.

Address of Welcome.
THE HONORABLE CORNELIUS D. SCULLY, Mayor of the City of Pittsburgh.

Address of Welcome.
JOHN P. GRIFFITH, Pittsburgh, President, Allegheny County Medical Society.

Announcements.
ARTHUR H. GROSS, Bellevue, Chairman, Local Committee on Arrangements.

Announcement of Scientific Program.
WALTER M. BORTZ, Greensburg, Chairman, Committee on Scientific Work.

Announcement of Scientific Exhibit.
GEORGE J. KASTLIN, Pittsburgh, Chairman, Committee on Scientific Exhibit.

Installation of President Lewis T. Buckman.

President's Address.
LEWIS T. BUCKMAN, Wilkes-Barre.

Entertainment.

FIRST GENERAL SCIENTIFIC ASSEMBLY

Tuesday, October 7, 9:30 a.m.

URBAN ROOM

9:30 to 10:30 a.m.

Reporter—MRS. LAURETTA B. WEARY, 51 Madison Ave., New York, N. Y.

Medical Choice of Selectees

Stating the Problem.
CHARLES H. HENNINGER, Pittsburgh, Chairman, Pennsylvania Committee on Medical Preparedness.

From the Viewpoint of the Local Registration Boards.
GERALD S. BACKENSTOE, Emmaus.

From the Viewpoint of the Pennsylvania Selective Service Board.
WILLIAM MATHER LEWIS, Selective Service Director for Pennsylvania.

From the Viewpoint of the National Selective Service Board.
LIEUT. COL. LEONARD G. ROWNTREE, Chief, Medical Division, Selective Service System, Washington, D. C.

10:30 to 11 a.m.

Question and Answer Period conducted by Director Lewis.

11 a.m.

Emotion and Body Changes.
IRA A. DARLING, Torrance.

OUTLINE: The interconnection of ideas, emotions, and physical reactions has long been recognized. Psychosomatic medical investigators are rapidly broadening knowledge of psychobiology, psychophysiology, and psychopathology. Prof. Adolph Meyer's stress of study of "the patient as a whole," Kurt Goldstein's "organismal" concept, and the discoveries of psychiatrists studying the emotional aspects of physical ailments open new fields of understanding and therapy. Dr. George I. Preston aptly says the idea of treating the head of the body separately is as fantastic as the Cheshire Cat or the Headless Horseman.

11:20 a.m.

Sedatives—Their Use and Abuse.
ELLIOTT B. EDIE, Uniontown.

OUTLINE. Sedatives grow in importance with the increase of chronic and functional conditions. Their use is to relieve symptoms in emergencies or while waiting for results from rational therapy; their abuse is the administration of doses too large or too long continued. Deleterious results are common and fatalities have occurred.

Discussion opened by GEORGE M. PIERSOL, Philadelphia (5 minutes).

11:40 a.m.

Common Errors in Selection of Patients for Surgery (40 minutes).
CHARLES GORDON HEYD, New York City (Guest).

OUTLINE. Errors may arise in the selection of patients for surgery from a variety of causes. Primarily these will involve errors in diagnosis. Of equal importance, however, will be errors in the commission of the surgery. The latter would embrace improper selection of the type of operation required or too extensive surgery for the conditions indicated A consideration of the subject would also imply discussion of its errors in the nonselection of patients for surgery; the latter would embrace errors by omission. It is axiomatic that the surgery must be selected for the patient and not the patient for the surgery. Seriatim are to be considered the major surgical indications and the development of safeguards so that every protection will be afforded the patient who is to be subjected to surgical procedures. The discussion also considers measures to make the surgery safe for the patient by accuracy in diagnosis and adequacy of preoperative preparation. Imperative surgical conditions will obviously admit of no great selection, but may properly embrace some preoperative treatment.

SECOND GENERAL SCIENTIFIC ASSEMBLY

Wednesday, October 8, 9:30 a.m.

URBAN ROOM

Reporter—MRS. LAURETTA B. WEARY, 51 Madison Ave., New York, N. Y.

Diagnosis and Treatment of the Unconscious Patient.
D. RAY MURDOCK, Greensburg.

OUTLINE. The more common conditions that produce coma, which the speaker has encountered during his practice, and their emergency treatment will be discussed. In many of these cases the history is unobtainable and special stress will be made on evaluation of symptoms in order to arrive at a proper diagnosis. The following conditions will be discussed: traumatic injuries of the head; circulatory accidents in the brain; metabolic disorders; ingestion of drugs; and neurotic conditions.

Discussions opened by ROBERT O. GARVIN, Pittsburgh (5 minutes).

9:50 a.m.

Interpretation of Abdominal Pain.
GEORGE P. MULLER, Philadelphia.

OUTLINE. Abdominal pain, like any other pain, represents a danger signal. Usually it is the symptom that brings the patient to his physician. Unfortunately it is the pain, irrespective of the cause, for which the patient demands relief. Pain in the abdomen may arise as true visceral pain, as an irritation of the parietal peritoneum, or as referred pain. The importance of these will be discussed briefly. Any generalized abdominal pain must always be considered as arising from acute appendicitis until this can be disproved. Localized pains of a chronic nature need minute history-taking and painstaking laboratory examinations often before the correct diagnosis can be made. The most important types of chronic pain are those of gastric ulcer and obstructive lesions of the gallbladder. Also of importance are the pains in the lower right section of the abdomen largely from a diagnostic standpoint. Abdominal pain may be associated with an intrathoracic affection and may be a manifestation of systemic disease.

10:10 a.m.

Problems of Aging (45 minutes).
EDWARD J. STIEGLITZ, Bethesda, Md. (Guest).

OUTLINE. The problems of aging are logically divisible into 3 major fields: (1) the biology of senescence as a process, (2) the human clinical problems of aging and of diseases characteristically associated with advancing years, which include the mental changes of senescence and senectitude as well as the physical changes, and (3) the socio-economic problems of a shifting age distribution in the population. These 3 divisions are intimately and inseparably related. Advances in clinical geriatrics depend upon increasing knowledge and understanding of the biology of aging. Similarly, the more that is known concerning the capacities and limitations of older men and women and the more efficient prophylactic geriatrics becomes, the more intelligent can be the attack upon the increasingly urgent socio-economic questions. Greater longevity without health is individually tragic and socially dangerous to national economy. Contrariwise, increased longevity may be made incalculably valuable if health is maintained and the vast potential resources of the elderly are wisely applied.

ROUND-TABLE CONFERENCES

Wednesday, October 8

Round-Table Conference on Infectious Diseases

11 a.m. to 12:30 p.m.

URBAN ROOM

Reporter—MRS. LAURETTA B. WEARY, 51 Madison Ave., New York, N. Y.

CHARLES L. BROWN, Philadelphia, *Chairman*

Assisted by the following who will present and later be prepared to answer questions or take part in discussion on

INFECTIOUS DISEASES: Meningitis; Pneumonia; Influenza; Measles; Scarlet Fever.

ROBERT R. MACDONALD, Pittsburgh
VERNER B. CALLOMON, Pittsburgh
THOMAS ST. CLAIR, Latrobe
WALDO E. NELSON, Philadelphia
PASCAL F. LUCCHESI, Philadelphia

Round-Table Conference on Office Gynecology

(Lantern Demonstration)

11 a.m. to 12:30 p.m.

SILVER ROOM

Reporter—MISS MARY E. REIK, Haddon Hall Apts., Bronxville, N. Y.

JOSEPH A. HEPP, Pittsburgh, *Chairman*

Assisted by the following who will be prepared to answer questions or take part in the discussion:
LEWIS C. SCHEFFEY, Philadelphia
WALTER J. LARKIN, Scranton
DAVID B. LUDWIG, Pittsburgh

Round-Table Conference on Problems of Aging

11 a.m. to 12:30 p.m.

FORUM ROOM

Reporter—MISS EYLEEN MASSER, 51 Madison Ave., New York, N. Y.

EDWARD L. BORTZ, Philadelphia, *Chairman*

Assisted by the following who will be prepared to answer questions or take part in the discussion:
EDWARD J. STIEGLITZ, Bethesda, Md.
ROY R. SNOWDEN, Pittsburgh
LAURRIE D. SARGENT, Washington
ROLAND N. KLEMMER, Lancaster

THIRD GENERAL SCIENTIFIC ASSEMBLY

Thursday, October 9, 9:30 a.m.

URBAN ROOM

Reporter—MRS. LAURETTA B. WEARY, 51 Madison Ave., New York, N. Y.

Arterial Hypotension.
THOMAS M. DURANT, Philadelphia.

OUTLINE. In surveys attempting to define normal blood pressure levels, arterial hypotension has been found to occur frequently in presumably normal individuals. Insurance statistics all agree that such individuals have a greater life expectancy than those with normal blood pressure. Certain symptoms, however, viz., fatigue, headache, psychasthenia, nervousness, etc., are frequently associated with hypotension. The relationship of these symptoms to the lowered arterial tension is discussed, and the important constitutional factors involved in this problem are stressed, together with therapeutic implications. The syndrome of postural hypotension is emphasized from the standpoints of etiology, diagnosis, and treatment.

9:50 a.m.

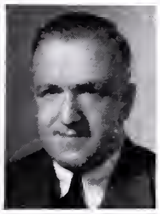
Advances in the Treatment of Arthritis (Lantern Demonstration).
HARRY M. MARGOLIS, Pittsburgh.

OUTLINE. In the past two decades more progress has been made in the understanding and treatment of rheumatic disease than had been made in all preceding years. The progress made was not based upon any *single* revolutionary discovery, but arose from a sound evaluation of therapeutic measures that have been tried. The relative importance of rest and exercise, diet, vitamins, blood transfusions, removal of infective foci, and of various "specific" measures, especially gold salt therapy, is at present established well enough to serve as a helpful guide in practice.

10:10 a.m.

The More Common Blood Dyscrasias—Their Diagnosis and Treatment (45 minutes).

Charles A. Doan, Columbus, Ohio (Guest).



Outline. The most common finding in clinical medicine perhaps is "anemia." The great variety of causes which underlie this sign with its accompanying symptoms necessitates a careful differential diagnostic study in each individual patient as the basis for rational therapy. Special emphasis will be placed upon the recognition and treatment of the "liver and iron-resistant" types of anemia. Disturbances in white cell equilibrium may be either primary or secondary. The criteria for differentiating these states will be cited, and the various therapeutic approaches to their control will be evaluated, with particular reference to the radioactive isotopes.

ROUND-TABLE CONFERENCES

Thursday, October 9

Round-Table Conference on Chemotherapy

11 a.m. to 12:30 p.m.

Urban Room

Reporter—Mrs. Lauretta B. Weary, 51 Madison Ave., New York, N. Y.

Hobart A. Reimann, Philadelphia, *Chairman*

Assisted by the following who will be prepared to answer questions or take part in the discussion:

John L. Atlee, Jr., Lancaster
John P. Scott, Philadelphia
Paul Gross, Pittsburgh

Round-Table Conference on Treatment of Wounds

11 a.m. to 12:30 p.m.

Silver Room

Reporter—Miss Mary E. Reik, Haddon Hall Apts., Bronxville, N. Y.

John P. Griffith, Pittsburgh, *Chairman*

Assisted by the following who will be prepared to answer questions or take part in the discussion:

William L. Estes, Jr., Bethlehem
Gilson C. Engel, Philadelphia

Round-Table Conference on Blood Dyscrasias

(Lantern Demonstration)

11 a.m. to 12:30 p.m.

Forum Room

Reporter—Miss Eyleen Masser, 51 Madison Ave., New York, N. Y.

George J. Kastlin, Pittsburgh, *Chairman*

Assisted by the following who will be prepared to answer questions or take part in the discussion:

Charles A. Doan, Columbus, Ohio
Thomas Fitz-Hugh, Jr., Philadelphia
Leandro M. Tocantins, Philadelphia
Maud L. Menten, Pittsburgh (by invitation)

SECTION ON MEDICINE

Officers of Section

Chairman—Arthur B. Thomas, Pittsburgh.
Secretary—James A. Shelly, Ambler.
Executive Committee—Cortlandt W. W. Elkin, Pittsburgh; Stanley D. Conklin, Sayre; Harry B. Wilmer, Philadelphia.

Reporter—Mrs. Lauretta B. Weary, 51 Madison Ave., New York, N. Y.

Tuesday, October 7, 2 p.m.

Urban Room, 17th Floor

Symposium on Gastro-intestinal Diseases

Oral and Cutaneous Manifestations of Vitamin Deficiency (Lantern Demonstration).

Thomas E. Machella, Philadelphia.

Outline. Presentation will consist of a colored-slide demonstration of the oral and cutaneous lesions which occur as the result of deficiency of various vitamins. Lesions important in the differential diagnosis will also be demonstrated.

Weil's Disease (Lantern Demonstration).

David W. Kramer, Philadelphia.

Outline. Weil's disease, according to statements, is of infrequent occurrence, but the incidence is probably more common than we realize. Statistics have been gathered in Pennsylvania and throughout the United States. These will be shown on slides. The figures show that spirochetal infectious jaundice is not a rare disease in Pennsylvania. Not many cases are recognized. In the presentation we will discuss the newer methods of diagnosing Weil's disease and the treatment. A résumé of two cases will be given.

Vitamin Deficiencies in Gastro-intestinal Diseases.

Thomas W. McCreary, Monaca, and George J. Kastlin, Pittsburgh.

Outline. We are interested primarily in vitamin C deficiency. Deficiency in this is more common than is generally realized in patients on restricted diets. Vitamin B deficiency also occurs in gastro-intestinal diseases, but there is a question whether it is as important as some of the enthusiasts have stated.

Clinical Significance of the X-ray Reports of Defect in the Duodenal Cap.

Cortlandt W. W. Elkin, Pittsburgh.

Outline. A discussion on the amount of credence to be placed in the x-ray reports. An evaluation of the clinical history and findings compared to the x-ray reports.

The Importance of Gastroscopy in Differentiating Gastric Lesions (Lantern Demonstration).

C. Wilmer Wirts, Jr., Philadelphia.

Outline. Of 800 patients examined by gastroscope and roentgen ray, a detailed statistical study was made. We believe the diagnosis of gastric lesions by these two methods is the same or similar in 80 per cent, while in the remaining 20 per cent the diagnosis is made up by each method singly in an equal number of cases. A group of patients who had symptoms of epigastric distress one or two years following cholecystectomy. Frequently these patients were suspected of having a recurrence of some form of biliary tract disturbance. In all of them gastroscopic examination demonstrated a gastric lesion. Diagnosis was made only by gastroscopy. All cases will be illustrated by slides.

The Management of Idiopathic Ulcerative Colitis.

Kendall A. Elsom, Philadelphia.

Outline. Idiopathic ulcerative colitis is a disease of unknown etiology characterized in its mild forms by diarrhea, and in the severe forms by diarrhea, melena, malnutrition, deficiency states of varied origin, fever, and anemia. It tends to be cyclic in occurrence and chronic in course. The management of the disease will be considered from the following viewpoints: treatment of the colon itself, the control of diarrhea, the prevention and treatment of coexistent deficiency disease, the management of the allergic aspects of the disease, and the rôle of surgery in treatment.

Changing Conceptions of Portal Cirrhosis.
Albert M. Snell, Rochester, Minn. (Guest).

Outline. On the basis of recent studies it seems probable that alterations in the chemical pattern of the liver, such as those produced by variations in the diet, are necessary for the maximal effect of any hepatotoxic agent on the organ. It has been shown experimentally that deficiencies in the intake of carbohydrate, protein, certain constituents of the vitamin B complex and of choline can either damage the liver or leave it vulnerable to toxins of exogenous or endogenous origin. Portal cirrhosis may, in this respect, result from a deficiency state. The fully developed clinical syndrome produced is characterized by symptoms of deficiency in respect to formation of plasma proteins, the antipernicious anemia factor, certain constituents of the vitamin B complex, and prothrombin. In the condition under consideration, encouraging results have been noted following treatment of the dietary and vitamin deficiencies.

Wednesday, October 8, 2 p.m.

Urban Room, 17th Floor

Report of Executive Committee—Election of Section Officers

Symposium on Heart Diseases

The Differential Diagnosis of Angina Pectoris (Lantern Demonstration) (20 minutes).
Charles C. Wolferth and Joseph Edeiken, Philadelphia.

Outline. It is essential that the characteristics of anginal attacks, including the various types of pain, distribution, modes of onset and offset, as well as exciting factors, be known. In doubtful cases exhaustive studies may be required. One of the most difficult problems may be the differentiation of esophageal spasm since the symptoms may be identical with those of angina pectoris.

Discussion opened by Alexander H. Colwell, Pittsburgh.

The Differential Diagnosis of Dyspnea (Lantern Demonstration) (20 minutes).
Frank J. Gregg, Pittsburgh.

Outline. The different types of dyspnea will be classified and discussed from the standpoint of pathologic physiology. The fundamental difference between true cardiac dyspnea and that due to space-consuming lesions of the thoracic viscera will be stressed. The physiologic basis of the arm to tongue circulation will be discussed along with the use of this test in differentiating certain cases of cardiac asthma from other asthmatic states.

Discussion opened by Augustus S. Kech, Altoona.

Rheumatic Pericarditis (Lantern Demonstration) (20 minutes).
J. Max Lichty, Pittsburgh.

Outline. The incidence of this condition is surprisingly high among patients admitted to the hospital with rheumatic heart disease. A study of about 50 such cases seen during the past 3 years, including diagnosis, electrocardiograph and x-ray findings, therapy, and prognosis. Also consideration of chronic pericarditis with effusion as a clinical entity.

Discussion opened by Andrew P. D'Zmura, Pittsburgh.

Some of the Present Methods of Treating Cardiac Arrhythmias (Lantern Demonstration) (20 minutes).
Thomas M. McMillan and Samuel Bellet, Philadelphia.

Outline. A discussion of the value and indications of such methods and drugs as carotid sinus pressure, digitalis, strophanthin, mecholyl, quinidine, and quinine in the treatment of auricular fibrillation, auricular flutter, auricular paroxysmal tachycardia, and ventricular paroxysmal tachycardia.

Discussion opened by Dr. Bellet.

The Use of Digitalis (Lantern Demonstration) (20 minutes).
Andrew B. Fuller, Pittsburgh.

Outline. The indications for the use of digitalis as based upon the accumulation of clinical observations and more recent pharmacologic data are reviewed. The conservation of the circulatory function in cardiac decompensation is stressed. An evaluation is made of digitalization of the compensated heart. Present-day concepts of the more advantageous modes of administration are outlined.

Discussion opened by Howard G. Schleiter, Pittsburgh.

The Clinical Value of Heart Sound Tracings with the Electrocardiogram.
Adolphus Koenig and Ellis W. Young, Pittsburgh.

Outline. The application and the limitations of sound tracings taken simultaneously with the electrocardiogram are discussed. Selection of proper cases is important. Examples are shown of normal heart sound tracings and of those occurring in various heart disease states; also, serial records of cases showing changes associated with treatment.

Painless Myocardial Infarction (Lantern Demonstration) (20 minutes).
William D. Stroud, Philadelphia, and (by invitation) Joseph A. Wagner, Philadelphia.

Outline. The terms coronary occlusion and myocardial infarction must be clearly comprehended in order properly to evaluate the patient's symptoms. Blumgart et al. have recently demonstrated that either one can occur without the other.

Postmortem studies previously reported have shown that in 50 per cent (in some series) of patients having demonstrable occlusions of the coronary arteries there has been an absence of any associated history of pain. Unfortunately, many of these reports do not mention whether or not myocardial infarction developed. Myocardial infarction has occasionally been reported without pain.

A review for a limited period of the cases of myocardial infarction at the Pennsylvania and Bryn Mawr Hospitals proved by typical electrocardiographic tracings or by autopsy was undertaken in order to determine the incidence of typical pain. A few illustrative cases are reported in detail.

Discussion opened by Harold L. Tonkin, Williamsport.

Thursday, October 9, 1:30 p.m.

Urban Room, 17th Floor

Symposium on Endocrines

Laboratory Evaluation of the Endocrines in Health and Disease.
Olive Hoffman, Philadelphia (by invitation).

Outline. First diagrammatic presentation of the secretory activity of certain of the glands of internal secretion in relation to time in the normal. Presentation of the times in the normal when excretion values and blood levels are determinable. Indications, as far as known, of the range of values for normal. Brief presentation of some of those endocrinopathies for which a correlation between the laboratory values and deranged glandular physiology has been rather strongly suggested.

Endocrine Glands and Their Relation to Diabetes.
J. Arthur Daugherty, Harrisburg.

Outline. A study of a definite group of endocrine patients and their relationship to diabetes.

The Use of Subcutaneous Implants of Testosterone Pellets in the Treatment of the Eunuchoid State.
Robert C. Grauer and Maitland Alexander, Jr., Pittsburgh.

Outline. Six eunuchoid patients, varying in age from 19 to 32 years, were treated by subcutaneous implantation of testosterone. Studies of estrogen and androgen excretion were made before and during treatment. Clinical improvement in sexual and general somatic development was noted and optimum initial and maintenance doses were determined.

The Rôle of the Adrenals in Health and Disease.
Julius M. Rogoff, Pittsburgh (by invitation).

Outline. The number of cases reviewed in which the rôle of the adrenals is discussed, their relationship to the other endocrine glands, and the particulars that bear in maintaining bodily health and their characteristics in disease.

The Male Sex Hormone.
Charles William Dunn, Philadelphia.

Outline. The primary purpose of the administration of male sex hormone is to correct a deficiency of male hormone in the male sex. After a series of trials with testosterone in the treatment of testicular deficiency in the human, it was found that such administrations were wholly inadequate and ineffective. With the advent of the clinical manufacture of synthetic male hormone there became available a naturally occurring hormone. This report will discuss the administration of male hormone in the various ages of male life with indication for treatment and therapeutic results observed in this series.

Diagnosis and Treatment of Pituitary Disorders.
Max A. Goldzieher, New York City (Guest).

Outline. Recognition of the clinical syndromes of pituitary disease (acromegaly, gigantism, nanosomia, Fröhlich's syndrome, etc.) is based on the appearance of the patients. Difficulties arise with the incomplete forms and the disorders due to partial loss or excess of function of the gland. Disturbed function of the pituitary at different age periods also causes different manifestations.

The diagnosis of pituitary disease demands a carefully elicited clinical history, through metabolic studies, and roentgenologic examination of the cranium. No single diagnostic sign is specific for pituitary disease, but the metabolic pattern is characteristic and osseous changes of the cranium are revealing.

Pituitary deficiencies seldom respond to mere substitution therapy; dietary methods must be added to correct body weight and to control metabolic disorders. Hormone therapy, especially with sex hormones, is used either to stimulate or to inhibit pituitary function. Radiation and surgery have a definite, although limited, field of usefulness.

SECTION ON SURGERY

Officers of Section

Chairman—Edwin P. Buchanan, Pittsburgh.

Secretary—Joseph D. Findley, Altoona.

Executive Committee—Robert L. Schaeffer, Allentown; Wilbur Emory Burnett, Philadelphia; Joseph P. Replogle, Johnstown.

Reporter—Miss Mary E. Reik, Haddon Hall Apts., Bronxville, N. Y.

Tuesday, October 7, 2 p. m.

Cardinal Room, 17th Floor

Symposium on Traumatic Surgery

Unusual Fractures Involving the Ankle Joints (Lantern Demonstration) (15 minutes).
Lewis C. Manges, Jr., Philadelphia.

Outline. The different types of fractures of the ankle emphasizing the more severe types which involve the weight-bearing area, bimalleolar fractures, posterior and anterior lip fractures. A series of slides illustrating these types of fractures and stressing the advantage of continuous traction on a Braun-Böhler splint.

Discussion opened by John Paul North, Philadelphia (5 minutes).

The Use of Sulfonamides in the Local Treatment of Severe Burns of the Body Surfaces (15 minutes).
Jonathan E. Rhoads, Philadelphia.

Outline.—The sulfonamide drugs may be used in the treatment of burns in 3 ways—by oral administration, by local application to the burned area instead of the use of tanning agents, and as a local application on burned areas which have been tanned after removal of the eschar. The tannic acid treatment was introduced by Davidson with the thought that toxic materials would be rendered insoluble by the application of the chemical. The protection which the eschar gives the burned area against infection is perhaps of greater importance. The method has been criticized on the ground that the tannic acid also destroys epithelium remnants which would be useful in regenerating the epithelial covering if they could be conserved. An additional criticism of the tannic acid treatment lies in the prevalence with which infection develops under the thicker portions of the eschar and in the difficulty of recognizing such infections early enough to obtain drainage before considerable spread has taken place. Areas of third-degree burn nearly always become infected, even if a good tan is established early. Such infections are especially frequent and serious in their results in burns of the face and hands. Several recent British reports have advocated that tanning methods be abandoned in such cases in favor of the immediate application of sulfanilamide or sulfathiazole. These drugs have been used in the local treatment of burns at the Pennsylvania and Graduate Hospitals during the past year. It is felt that they have given extremely favorable results, which we hope to present in the form of color photographs. Powdered sulfanilamide and powdered sulfathiazole have also been very useful in the preparation of granulating surfaces for skin grafting. They may be reapplied at the time of grafting without danger of injuring the grafts.

Skull Fractures and Associated Injuries to the Brain (15 minutes).
Dudley P. Walker, Bethlehem.

Outline. The fracture is second in importance to the brain injury. Conservative treatment recognized as best. Indications for operation. Lumbar puncture. Statistics.

The Treatment of Compound Fractures (15 minutes).
Calvin M. Smyth, Jr., Philadelphia.

Outline. The present war has been responsible for a great revival of interest in the treatment of compound fractures. There has been an opportunity to re-examine carefully all of the classical methods. These are briefly reviewed. Trueta's experience in the recent Spanish Civil War provided an unprecedented opportunity to subject the closed cast method to a mass clinical trial. Although the author and his associates have constantly advocated this method for the past 14 years, it has been accorded but little support. In the light of Trueta's experience, and more recently the experience of both British and American surgeons in the present war, it is now in order that the attention of the profession be once more directed to the obvious choice of the closed cast method.

Discussion opened by Damon B. Pfeiffer, Philadelphia (5 minutes).

Treatment of Compound Fractures Involving Joints (Lantern Demonstration) (15 minutes).
J. Walter Levering, Abington.

Outline. A chart covering a 5-year period of compound fractures involving joints (phalanges not included) of patients admitted to Abington Memorial Hospital will be presented. It shows joints involved, associated injuries, days in hospital, duration of subsequent treatment, and final results. X-rays before and after reduction, as well as progress, will be shown. Photographs of functional results. Discussion of the special problems involved in the different fractures and therapeutic measures used to meet these problems. Conclusions will be drawn from the series of cases.

Discussion opened by Damon B. Pfeiffer, Philadelphia (5 minutes).

The Mental Side of Trauma.
George J. Wright, John A. Malcolm, and Harold L. Mitchell, Pittsburgh.

Injuries to the Spine.
John H. Alexander, Pittsburgh.

Discussion opened by Paul B. Steele, Pittsburgh.

Wednesday, October 8, 2 p. m.

Cardinal Room, 17th Floor

Report of Executive Committee—Election of Section Officers

Goiter (15 minutes).
Verne G. Burden, Philadelphia.

Outline. The importance of nodular goiter after the age of 40. The clinical syndrome and diagnostic features which are independent of so-called hyperthyroidism. The relationship between the toxicity of nodular goiter and cardiovascular states. The misleading significance of the basal metabolic rate in these forms of thyroid disease. The principles of surgical treatment of this condition, particularly the importance and rationale of total thyroidectomy.

Discussion opened by Harold L. Foss, Danville.

Problems in Surgical Diseases of the Large Bowel (Lantern Demonstration) (15 minutes).

DONALD C. GEIST, Philadelphia.

OUTLINE. A discussion of the diagnosis and differential diagnosis of surgical lesions of the large bowel with special reference to the early diagnosis of carcinoma and the importance of diverticulitis in the diagnosis as well as other lesions.

Abscess About the Liver (Lantern Demonstration) (15 minutes).

CLIFFORD LEE WILMOTH, Pittsburgh.

OUTLINE. Diagnosis: early diagnosis often difficult. History of onset, course of symptoms, physical findings, and x-ray changes will be discussed. Aspiration of the abscess with injection of iodized oil for exact size and extent of cavity may be helpful. This also permits definite determination of the organism responsible for the abscess. The method of treatment will depend upon the causative organism, the location of the abscess, and its relation to the pleural and peritoneal cavities.

Discussion opened by FREDERIC S. MORRIS, Pittsburgh (5 minutes).

Acute Appendicitis in Children (Lantern Demonstration) (15 minutes).

J. MONTGOMERY DEAVER, Philadelphia.

OUTLINE. A study of acute appendicitis in children 14 years of age and under covering a period of 11 years—approximately 300 cases. Preoperative treatment, operative procedures, and postoperative treatment. Reasons for reduction of mortality discussed. Some remarks on the use of sulfanilamide in the perforated cases.

Acute and Chronic Perforations of the Gallbladder (15 minutes).

ROBERT L. SCHAEFFER, Allentown.

OUTLINE. Early diagnosis and early treatment should be instituted to prevent perforation of the gallbladder because mortality in this class of cases is too high. The family physician should be encouraged not to wait too long before surgery is recommended. Too much gallbladder surgery is done on end-stage pathology. A history of digestive disturbances should suggest careful study of the gallbladder. Gallstones without colic are too often undiagnosed even though other atypical symptoms are present. All diseased gallbladders should be removed, even though the symptoms are not urgent, before they become acute. If acute symptoms do not subside in a reasonable time, the gallbladder should be removed in the acute attack to prevent subsequent perforation. Summary and analysis of 17 cases of acute and chronic perforations of the gallbladder.

Discussion opened by GEORGE W. HAWK, Sayre (5 minutes).

Liver Toxicity in Anesthesia; Its Surgical Importance (Lantern Demonstration) (15 minutes).

LESTER M. MORRISON and WILLIAM A. SWALM, Philadelphia.

OUTLINE. The choice of anesthesia in surgery of the biliary tract and other organs is frequently one of vital importance to the patient, particularly in the presence of existing liver damage. To date, no comprehensive studies on the toxic effects from anesthetics in the human with respect to the liver have been reported in the literature. Such studies carried out in the past in the experimental animal often do not apply under clinical and operative conditions to the patients undergoing surgical procedures on the biliary tract and receiving various anesthetics. A quantitative study is herein reported of the postoperative liver function in 9 groups of patients after use of the following anesthetics: spinal in the presence of proven liver disease; spinal in patients with proven normal livers; combined ether in patients with proven normal livers; cyclopropane; avertin; sodium evipal intravenous anesthesia; nitrous oxide and oxygen; chloroform. Following operation under the above anesthetics, the bile salt concentration in the surgical drainage bile and in the urine was estimated from the first postoperative day and up to the seventeenth postoperative day. Comparisons are made and conclusions drawn from these studies which are of practical use and guidance in the choice of anesthesia for abdominal surgery, with particular reference to the liver.

Report on 10,000 Pentothal Sodium Anesthetics (15 minutes).

GEORGE J. THOMAS, Pittsburgh.

OUTLINE. This paper deals with the clinical and laboratory observations on 10,000 pentothal sodium anesthetics. The technic will be described for the administration of pentothal alone and in combination with salt and glucose through a single needle. A short discussion on the morbidity and mortality with this agent. The paper will include the various contraindications to the use of intravenous narcosis.

Discussion of preceding 2 papers opened by WILBUR EMERY BURNETT, Philadelphia (5 minutes).

Surgery in the Presence of Pulmonary Tuberculosis (Lantern Demonstration).

EDWARD S. WELLES, Saranac Lake, N. Y. (Guest).

OUTLINE. Twenty years' experience in general surgery and thoracic surgery on tuberculous patients. The question of the choice of anesthetic will be stressed, also the importance of an expert anesthetist, the rarity of pulmonary complications following operations, postoperative care, co-operation between the surgeon and the tuberculosis physician, etc. Special reference will be made to tonsillectomies. The relation of pregnancy to tuberculosis will be discussed. Finally, a short review of the actual surgical treatment of pulmonary tuberculosis itself will be given.

Thursday, October 9, 1:30 p.m.

CARDINAL ROOM, 17TH FLOOR

Pulmonary Suppuration Complicating Diabetes Mellitus (15 minutes).

HARRY R. DECKER, Pittsburgh.

OUTLINE. This paper is based on a study of recent reports from a number of clinics. Pulmonary suppuration in the diabetic is a comparatively rare but very serious complication in its various forms—pneumonitis, solitary or multiple abscess, putrid abscess, gangrene, bronchitis. Etiologic factors are those of suppuration in the nondiabetic; diabetes itself does not produce pulmonary abscess or gangrene, nor does it seem to predispose to them. Diabetics with lung suppuration are extremely ill, spontaneously; a large number die within a comparatively short time. Treatment should be directed primarily to the lung infection; the diabetes secondarily. If medical treatment fails, a number of cases need surgery, external drainage for localized abscess, lobectomy for bronchiectasis. Surgical treatment follows well-established indications and thoracic procedures. In general it is essential to operate at a time earlier than if there were no diabetes. The treatment of the diabetes, however, is important, with adjustment of the diet to the surgical régime, the administration of insulin, and carefully chosen anesthesia. With these precautions, the mortality following operation, while high, is no greater than in the nondiabetic. Results of the study are tabulated and discussed.

Discussion opened by JOSEPH H. BARACH, Pittsburgh (5 minutes).

The Surgical Treatment of Osteo-arthritis (15 minutes).

PAUL H. HARMON, Sayre.

OUTLINE. The diagnostic points in osteo-arthritis are discussed. The disease does not necessarily occur in those of middle and advanced age, but is most common in these age groups. It is not related to infection. The patient is usually in good health, the only complaint being referable to the joints. Blood chemistry is normal (unless some other disease alters it); the blood sedimentation rate is normal and the blood count normal. The diagnosis is finally determined upon the basis of localization of symptoms and positive findings in the x-ray of narrowing of the joint space (degenerative changes) and bony outgrowths from the osseous regions neighboring upon the joints. This general appearance is discussed in relation to the specific joints, particularly those in the lower extremity.

Discussion opened by JOHN S. DONALDSON, JR., Pittsburgh (5 minutes).

Surgery in the Aged (15 minutes).

RAYMOND L. EVANS, Sayre.

OUTLINE. Many surgical conditions common to middle life are encountered in the age group of 60 and beyond. Much evidence has accumulated to show that elderly people tolerate surgery surprisingly well if the choice of anesthetic, operation, and management is carefully considered. A justifiable operation provides many of these aged patients with additional years of comfortable living.

Transplantation and Regeneration of Tissue (Lantern Demonstration) (15 minutes).

HANS MAY, Philadelphia.

OUTLINE. Description of the regenerative processes involving transplants, such as skin, fat, fascia, tendon cartilage, bone and joints after their transfer, and clinical examples for each type of transplant.

Discussion opened by GEORGE P. MULLER, Philadelphia.

Soft Tissue Repair (Lantern Demonstration) (15 minutes).

Kerwin M. Marcks, Emmaus.

Outline. An attempt is made to present a concrete, simple treatment for injuries about the face and head, stressing particularly local and general considerations. A method for distribution of available literature on this subject to the physician who treats the majority of these cases is discussed.

Discussion opened by Hans May, Philadelphia (5 minutes).

Treatment of Recurrent Symptoms Secondary to Previous Operations on the Gallbladder and Biliary Ducts. Analysis of 140 Patients Requiring Secondary Operations (Lantern Demonstration) (15 minutes).

Harold L. Foss, Danville.

Outline. Recurrence of symptoms following operations on the gallbladder is common. It results chiefly from an incomplete operation at the first sitting; from mere drainage of a diseased gallbladder with failure to remove it; from overlooking stones in the gallbladder at time of the first operation, and especially in the common duct; from traumatism of the ducts at the time of the first operation; from cholecystectomies performed on gallbladders which are normal (a gallbladder once drained is thereafter never a normal gallbladder); and from cholecystectomies for the relief of symptoms when the gallbladder is essentially negative. The number of operations performed for "noncalculous cholecystitis," "mild cholecystitis," "cholesterosis," etc., is undoubtedly too high. Among 2460 patients with biliary tract disease operated upon by the author, 140 patients had been operated upon at least once before, yet continued to complain of symptoms similar to those for which the first operation was performed. Results of a study of these patients are presented.

Discussion opened by Eldridge L. Eliason, Philadelphia (5 minutes).

Surgery in the Presence of Diabetes.

Leland S. McKittrick, Boston, Mass. (Guest).

Outline. The problem of surgery in the diabetic will be discussed from a review of operations performed on approximately 1500 diabetic patients by the writer and his associate, Dr. T. C. Pratt. The effect of diabetes upon the patient as a surgical risk, the indications for the various operations, as well as the preparation of the patient for operation, will be discussed. Particular attention will be given to the management of carbuncles and the lesions of the lower extremities. The rôle of the newer chemotherapeutic agents in the management of these conditions will be discussed.

SECTION ON EYE, EAR, NOSE, AND THROAT DISEASES

Officers of Section

Chairman—John B. McMurray, Washington.

Secretary—Edmund B. Spaeth, Philadelphia.

Executive Committee—deWayne G. Richey,* Pittsburgh; Philip H. Decker, Williamsport; Louis H. Clerf, Philadelphia.

Reporter—Miss Eyleen Masser, 51 Madison Ave., New York, N. Y.

Wednesday, October 8, 2 p. m.

Forum Room, 17th Floor

Ophthalmology

Recent Improvements in the Treatment of Retinal Separation (30 minutes).

Harvey E. Thorpe, Pittsburgh.

Outline. Recent developments in retinal detachment diagnosis and in retinal detachment treatment.

Recent Advances in Cataract Surgery. (Illustrated by Colored Motion Pictures) (30 minutes).

Luther C. Peter, Philadelphia.

Outline. An analysis of some of the new procedures. The newer procedures in cataract surgery which the author advocates are: intracapsular extraction; rigid classification into senile, nuclear, and complicated cataract; proper preliminary studies; new forms of technic: (a) good local anesthesia and avertin general anesthesia in all possible cases; (b) the use of a bridle suture; (c) lid sutures; (d) a peripheral iridectomy with a knife needle, with preservation of the pupil in all possible cases; (e) section with a conjunctival flap; (f) firm closure of the corneal wound with a corneoscleral suture; (g) operation when the patient is no longer able to follow his vocation satisfactorily; (h) a one-stage operation; (i) the use of rubber gloves in all eye surgery, including cataract extraction.

The Analysis of Fundus Pathology by Photographs (30 minutes).

George H. Shuman and Charles F. Kutscher, Pittsburgh.

Outline. A variety of fundus lesions photographed in color will be shown and correlated with the etiologic findings disclosed by systemic study.

The Surgical Treatment of Glaucoma.

William L. Benedict, Rochester, Minn. (Guest).

Outline. Surgical treatment of glaucoma is indicated when nonsurgical measures are no longer effective in preventing abnormally high intra-ocular tension. Many effective operations have been promulgated since von Graefe described iridectomy. The experiences of many surgeons with various operations may be summed up in a few generalizations whereby one can exercise reasonable judgment in the selection of a surgical procedure to employ in an individual case of glaucoma with anticipation of a favorable result.

The factors that influence the surgeon in the selection of an operative procedure should be based on the condition to be remedied rather than on his own familiarity with a particular surgical technic. A successful outcome requires full knowledge of the condition of the eye and ability on the part of the surgeon to utilize to the best advantage the measures for relief of intra-ocular tension that have been proved by experience of others to have been most useful. My experience in glaucoma surgery is neither extensive nor outstanding, but is given for whatever value it may be to others.

Thursday, October 9, 1:30 p. m.

Forum Room, 17th Floor

Ear, Nose, and Throat Diseases

Report of Executive Committee—Election of Section Officers

Malignancy of the Nasal Accessory Sinuses (30 minutes).

Nelson S. Weinberger, Sayre.

Outline. Classification. Suggestions for simplification. Vulnerability to radiation therapy difficult to predetermine. Methods of diagnosis and treatment. Case reports.

Chemotherapy in Upper Respiratory Tract Infections (20 minutes).

Francis W. Davison, Danville.

Outline. This paper is based on a study of 100 patients who had various types of upper respiratory infection. These cases were divided into two comparable groups. Patients in first group were treated by the usual methods; in second group, by the same methods plus one of the sulfonamide drugs. Results in both groups are compared with respect to duration of illness and incidence of complications. The importance of obtaining reliable cultures from the infected area is stressed. Methods of obtaining culture specimens for determination of the infecting organism briefly described.

The Use of Silver Picrate in Sinus Infections (Lantern Demonstration) (20 minutes).

Leon Felderman, Philadelphia.

Outline. Report is based on a study of 200 cases of sinus infection treated with silver picrate. Under normal conditions they maintain adequate ventilation and drainage through the rhythmic to-and-fro motion, resembling a wheat field. The factors which influence the mechanism of these rhythmic ciliary movements are many and variable. The symptoms of sinus infections are regional, systemic, and neurologic. The last group of symptoms often obscures the true picture. Observations in these cases show that silver picrate does not interfere with ciliary action. Bacteriologic cultures were made before treatment. Fifteen days later patients were recultured and secondary rhinologic flora noted. In slightly hypertonic solutions silver picrate was found to be efficacious.

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* Deceased.

Indications for Tonsillectomy (30 minutes).

GEORGE M. COATES and WILLIAM GORDON, Philadelphia.

OUTLINE. The problem of focal infection is briefly discussed. Emphasis placed upon upper part of respiratory tract in general, and the faucial tonsils in particular. The lymphoid elements in the nasopharynx and laryngopharynx are considered. Indications for tonsillectomy considered under 3 headings: conditions within tonsils; conditions adjacent to tonsils; and conditions remote from the tonsils.

Statistics are not always reliable for guidance. Each patient should be individualized, his condition thoroughly studied. Reexaminations and frequent conferences, if necessary, should be undertaken among the specialists and physician in charge. The best results will be obtained by diligent and faithful co-operation of all in any clinical survey, especially those states involving focal infection with resultant secondary morbid changes in the great vital organs. Conservatism in the truest sense means to conserve function to the uttermost.

Respiratory Tract Obstructions and Their Treatment.

THOMAS C. GALLOWAY, Evanston, Ill. (Guest).

OUTLINE. Causes of obstruction of the airway are outlined. As an example, acute laryngotracheobronchitis will be discussed in detail with emphasis on the pathophysiology. Secondarily to increased negative intrathoracic pressure occur congestion, transudation, capillary damage, atelectasis, and emphysema. When infection is superimposed there may follow pneumonitis, atypical pneumonias, and later focal necrosis, lung abscess, or bronchiectasis. Because these conditions quickly become irreversible, intervention must not be long delayed. Treatment including tracheotomy, postural irrigation, and drainage has markedly reduced the mortality. Injury to the respiratory tract by flame and by war gasses has some factors in common and may respond to similar treatment.

SECTION ON PEDIATRICS

OFFICERS OF SECTION

Chairman—JOHN D. STURGEON, JR., Uniontown.

Secretary—ELWOOD W. STITZEL, Altoona.

Executive Committee—JOHN P. SCOTT, Philadelphia; JOHN M. HIGGINS, Sayre; RALPH M. TYSON, Philadelphia.

Reporter—MRS. RUTH FOX PRICE, 120 West Abbottsford Ave., Philadelphia, Pa.

Tuesday, October 7, 2 p. m.

SILVER ROOM, 17TH FLOOR

Treating the Colicky Infant (12 minutes).

JOHN M. HIGGINS, Sayre.

OUTLINE. Consideration of theories as to cause; namely, improper feeding habits, bad hygiene, allergy, etc. Discussion of treatment.

Discussion opened by CARL C. FISCHER, Philadelphia (4 minutes).

Feeding the Sick Child (Lantern Demonstration) (12 minutes).

ELIZABETH KIRK ROSE, Philadelphia.

OUTLINE. The nutritional needs of the sick child discussed from the standpoint of caloric requirements, fluids, vitamins, minerals, and salts. Modifications indicated in acute febrile, chronic, and the more frequent illnesses of childhood. Consideration of best methods to meet these requirements through feeding.

Discussion opened by HYMAN A. SLESINGER, Windber (4 minutes).

Treatment of the Epileptic Child (Lantern Demonstration) (15 minutes).

D. STEWART POLK, Rosemont.

OUTLINE. Recent advances in the treatment of epilepsy, especially the use of sodium diphenyl hydantoinate (dilantin sodium). Results with use of this drug since 1938 at Children's Hospital of Philadelphia. New concepts of anticonvulsant therapy and their relation to the epileptic child.

Discussion opened by JOSEPH A. GILMARTIN, Pittsburgh.

The Intestinal Manifestations of Milk Allergy in the Newborn Period (15 minutes).

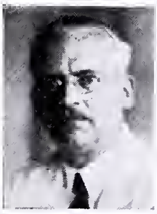
MITCHELL I. RUBIN, Philadelphia.

OUTLINE. Gastro-intestinal disturbances due to milk sensitivity have been found with increasing frequency in babies born into allergic families. The manifestations of this reaction are distinctive enough to be called a syndrome. Colic is usually the earliest symptom, soon followed by blood and mucus in stools; vomiting is uncommon, even though pylorospasm is frequent. The allergic family history, early institution of cow's milk feeding, presence of blood and stool eosinophilia, disappearance of symptoms on withdrawal of cow's milk, late occurrence of eczema or other allergic manifestations attest the nature of this symptom-complex.

Discussion opened by GEORGE J. FELDSTEIN, Pittsburgh (5 minutes).

Prevention and Treatment of Vitamin Deficiencies in Children (Lantern Demonstration) (55 minutes).

SAMUEL W. CLAUSEN, Rochester, N. Y. (Guest).



OUTLINE. A brief review of the concept of disorders due to dietary deficiency. The following topics considered: daily requirement for the known vitamins; practical methods for the prophylactic use of vitamins; the merits of ordinary and fortified foods, special vitamin preparations, concentrates, and mixtures of vitamins; occurrence and treatment of the recognized vitamin deficiencies; importance of combined deficiencies; use of vitamins in special conditions—hemorrhagic disease of the newborn, tetany in the newborn, celiac disease, respiratory infections, convalescence from infections, and chronic eczema.

The Diagnosis of Giardia Intestinalis Infestation by Means of Intestinal Intubation; the Treatment with Atabrine and Follow-up Studies of 60 Cases (Lantern Demonstration) (15 minutes).

ELIZABETH P. MARIS, Philadelphia (by invitation).

OUTLINE. The study of a selected number of children with giardiasis is being carried out at Children's Hospital of Philadelphia. Diagnosis is made on presence of giardia cysts in stool specimens and/or active giardia forms in specimens of duodenal juice. Reference to recent reports in the literature suggested that the drug atabrine is an effective parasiticide and gratifyingly nontoxic to the patient. Follow-up studies are being made on stools and in some cases on the duodenal juice also. A large proportion of the patients are followed for at least 6 months. Stools are free of giardia, with very few exceptions, within one week, and symptoms of abdominal pain have also disappeared at this time. By end of one month improvement in appetite and weight begins to be apparent in most cases. There have been few recurrences or reinfestations to date.

Discussion opened by PHILIP S. BARBA, Philadelphia (5 minutes).

Pseudohemophilic Diatheses (15 minutes).

THEODORE O. ELTERICH, Pittsburgh, and CHARLES F. ELTERICH, Washington.

OUTLINE. A series of cases from Children's Hospital of Pittsburgh reported in whom were noted a tendency to periodic spontaneous hemorrhages resembling hemophilia; however, genealogic investigations failed to show any hereditary tendency. These patients possessed both a delayed coagulation and bleeding time. The clot retraction either failed to occur or was much delayed from the normal. No calcium deficiencies noted. Thrombocytic values normal. Rumpel-Leed phenomena negative.

Discussion opened by RALPH M. TYSON, Philadelphia (5 minutes).

Wednesday, October 8, 2 p. m.

Silver Room, 17th Floor

Report of Executive Committee—Election of Section Officers

Scarlet Fever Immunization of School Children (10 minutes).

J. Hart Toland, Philadelphia, representing Pennsylvania School Physicians' Association.

Outline. Proportion of children showing positive Dick reactions. Incidence of serum sickness following injections. Protection against scarlet fever conferred, as indicated by subsequent medical records of children receiving immunizing serum.

Toxin Immunization Against Scarlet Fever (15 minutes).

Maud L. Menten, Pittsburgh (by invitation).

Outline. For some time the laboratory of Children's Hospital, Pittsburgh, has been working on the chemical separation of the toxin of scarlet fever. Preparations containing an increasing concentration of the toxin have been successively isolated. Each of these preparations has been tested on children for efficiency in immunization against scarlet fever; 70 to 75 per cent of Dick-positive children can be readily made Dick-negative with 3 doses of such preparations. These children show little local or systemic reaction. Four or more doses are needed to immunize the remaining 25 to 30 per cent of the Dick-positive children, and severe reactions are encountered in a small number.

Discussion opened by Henry T. Price, Pittsburgh (5 minutes).

Allergic Reactions with the New Refined Scarlet Fever Antitoxin (Lantern Demonstration) (15 minutes).

Joseph S. Baird, Pittsburgh.

Outline. A definite hazard is generally recognized when horse serum of any sort is injected into patients. This presentation covers results obtained and allergic reactions noted with two brands of scarlet fever antitoxin used in the treatment of scarlet fever patients. Over 1000 cases reviewed; a definite lowering of the incidence and severity of allergic manifestations shown. These results would indicate important advance in this field.

Discussion opened by Lloyd W. Pumphrey, Pittsburgh.

Limitations in the Control of Communicable Infections (15 minutes).

J. Moore Campbell, Harrisburg, representing the Department of Health of Pennsylvania.

Outline. Briefly historical. Etiology and epidemiology in relation to control. Preventable infections relatively few. Immunization. Quarantine. Futility of the latter in most instances. The alternative. Summary.

The Physical Aspect of the Adolescent Period (Lantern Demonstration (55 minutes).

Joseph A. Johnston, Detroit, Mich. (Guest).

Outline. Growth in man proceeds in a series of alternating rapid and slow periods, the final one marked by sexual maturity. The speed of growth immediately preceding this is in marked contrast to that following, and this is reflected in differences in basal metabolism and utilization of calcium and nitrogen, studies of which in adolescent girls throughout the periods preceding and following the onset of menstruation are presented. The relation of thyroid and the estrogenic hormone to the metabolism of these substances is presented. The dietary requirement of the adolescent is reviewed, and in connection with this the management of obesity at this age. The menstrual difficulties of this age are discussed, the wide normal variation being pointed out, and the thesis developed that the management of the abnormal situation requires a survey of the whole child rather than an approach on a purely gynecologic basis. The sharp increase of the adult type of tuberculosis at this age is again pointed out and a series of slides presented to show the transition from first infection to reinfection observed in a 12-year study in Detroit.

Sulfathiazole Therapy in the Pneumonias of Infancy and Childhood, with Special Attention to the Blood Picture and a Comparison with the Therapeutic Effect of Sulfapyridine and Sulfadiazine (Lantern Demonstration) (15 minutes).

Horst Albert Agerty, Merion.

Outline. Treatment of the pneumonias of infancy and childhood with special reference to comparative results using nonspecific methods and employing sulfapyridine, sulfathiazole, and sulfadiazine. A study of the blood count in relation to the therapy is also included.

Discussion opened by L. Clair Burket, Altoona (5 minutes).

The Treatment of Otitis Media in Children (12 minutes).

James Warren Hershberger, Martinsburg.

Outline. The treatment of otitis media in office, home, and hospital discussed in a practical manner, with the idea of being helpful to all those treating children.

Discussion opened by Freeman A. Lanson, Pittsburgh.

SECTION ON DERMATOLOGY

Officers of Section

Chairman—Park A. Deckard, Harrisburg.

Secretary—Bernhard A. Goldmann, Pittsburgh.

Executive Committee — Lawrence G. Beinhauer, Pittsburgh; William D. Whitehead, Scranton; Vaughn C. Garner, Philadelphia.

Reporter—Miss Mary E. Reik, Haddon Hall Apts., Bronxville, N. Y.

Tuesday, October 7, 9 a. m.

Silver Room, 17th Floor

The Management of Scabies.

John W. Barr, Johnstown, and Warren F. White, Johnstown.

Outline. A common parasitic infestation frequently encountered in general practice and often overlooked. Emphasis is placed on diagnostic points, choice of medications, instructions for the patient, and dangers of overtreatment.

Discussion opened by Edward J. Moore, Irwin.

The Diagnosis and Treatment of Seborrheic Dermatitis.

Frederick Amshel, Pittsburgh.

Outline. A review of seborrheic dermatitis with reference to the etiology, description of the eruption, and treatment.

Discussion opened by George J. Busman, Pittsburgh.

Vitamin A—Effect in Pityriasis Rubra Pilaris and Keratosis Follicularis.

Mashel F. Pettler, Beaver Falls.

Outline. The use of vitamin A has become more prominent in the treatment of follicular dermatoses. Among the skin conditions where it has been used are pityriasis rubra pilaris and keratosis follicularis. The author is presenting two cases showing its successful use in pityriasis rubra pilaris and failure in keratosis follicularis.

The Sulfonamide Drugs in Dermatology.

Louis A. Brunsting, Rochester, Minn. (Guest).

Outline. Sulfanilamide and sulfathiazole have added a new chapter to dermatologic therapy, especially, but not exclusively, in the field of infection by staphylococci and streptococci. Treatment is internal and external (topical application) according to whether the infection is systemic or localized. The value of these drugs has been proved in the following conditions:

Systemic: erysipelas, cellulitis, recurrent lymphangitis often secondary to trichophytosis, carbuncle, extensive furunculosis, hidradenitis suppurativa, pyoderma gangraenosum, lymphogranuloma inguinale, gonorrheal keratosis.

Localized: impetigo contagiosa, folliculitis, dermatitis repens, ecthyma, chancroid, infectious eczematoid dermatitis, infected eczema, ulcers, wounds, burns, prophylactic treatment of surgical wounds and skin grafts.

Evaluation of Cryotherapy in the Treatment of Acne Scars.

LESTER HOLLANDER, Pittsburgh, and JOSEPH M. SHELTON, Washington.

OUTLINE. A series of patients presenting post-acne scars treated with a minimum of 20 weekly treatments employing a slush of carbon-dioxide snow, acetone, and precipitated sulphur. Results are reported. Technic and indications are discussed.

Discussion opened by CHARLES L. SCHMIDT, Pittsburgh.

The Rôle of Biopsies in Dermatology.

JACQUES P. GUEQUIERRE, Philadelphia, and FRED D. WEIDMAN, Philadelphia.

OUTLINE. The authors plan to review briefly the work of early dermatologists, methods of obtaining biopsies, care of specimens, clinical history for the pathologist, the importance of histologic sections in malignancies, and a review of biopsies done in the Department of Dermatology at the University of Pennsylvania for some years past.

Discussion opened by FREDERICK M. JACOB, Pittsburgh.

Contact Dermatitis.

MEYER W. RUBENSTEIN, Pittsburgh.

OUTLINE. Contact dermatitis is one of the most common skin conditions. Distinction is made between contact dermatitis, dermatitis venenata, and allergic dermatitis. Various causes of contact dermatitis are discussed together with an outline of the topographic distribution to facilitate diagnosis.

Discussion opened by LAWRENCE G. BEINHAUER, Pittsburgh.

SECTION ON UROLOGY

OFFICERS OF SECTION

Chairman—ROBERT L. ANDERSON, Pittsburgh.

Secretary—WILLARD C. MASONHEIMER, Allentown.

Executive Committee — WILLIAM H. MACKINNEY, Philadelphia; STACY M. HANKEY, Pittsburgh; FREDERICK S. SCHOFIELD, Philadelphia.

Reporter—MRS. RUTH FOX PRICE, 120 West Abbottsford Ave., Philadelphia, Pa.

Tuesday, October 7, 9 a. m.

FORUM ROOM, 17TH FLOOR

Introductory Remarks.

ROBERT L. ANDERSON, Pittsburgh, *Chairman*.

Double Primary Malignancies.

ISAAC L. OHLMAN, Pittsburgh.

OUTLINE. The incidence of occurrence will be discussed, and lesions found in 3 patients demonstrated.

Pathology and Treatment of Renal Tumors.

ALFRED E. BOTHE, Philadelphia.

OUTLINE. Discussion of pathology of renal tumors, the laws of radiosensitivity, the mechanics of irradiation, and the progress of tumors treated by irradiation. Treatment based on pathology will be considered.

Surgical Treatment of Renal Tumors (Lantern Demonstration).

ELMER HESS, Erie.

OUTLINE. Early diagnosis will be stressed and surgical treatment demonstrated by lantern slides.

Diagnosis and Treatment of Primary Ureteral Tumors (Lantern Demonstration).

SAMUEL L. GROSSMAN, Harrisburg.

OUTLINE. The condition is not as rare as supposed. Diagnosis will be demonstrated by lantern slides, and surgical treatment discussed.

Twenty Years' Experience with Bladder Tumors (Lantern Demonstration).

EDWARD J. MCCAGUE, and GEORGE H. STRONG (by invitation), Pittsburgh.

OUTLINE. Vesical carcinoma, a common disease, frequently presents itself to the general practitioner as a painless hematuria which may have completely subsided by the time physician sees patient. During the past 20 years there have been admitted to the urologic service at Mercy Hospital, Pittsburgh, over 200 patients with vesical carcinoma, constituting 3.2 per cent of the total urologic admissions. It is our purpose to present a careful analysis of the various forms of treatment and results accruing therefrom.

Discussion of the above papers will be opened by CHARLES A. WATERS, Baltimore, Md. (by invitation).

General discussion.

Wednesday, October 8, 9:30 a. m.

CLUB FLOOR PARLOR, CLUB FLOOR

REPORT OF EXECUTIVE COMMITTEE—ELECTION OF SECTION OFFICERS

Nonspecific Urethritis (15 minutes).

JOHN D. DENNY, Columbia.

OUTLINE. Tendency for general practitioner to consider every urethral discharge as gonococcal in origin. Need for accurate diagnosis, value of history, types of bacteria found, sources of infection, and treatment discussed.

Discussion opened by ROBERT C. HIBBS, Pittsburgh.

Fertility in the Male (15 minutes).

HENRY K. SANGREE, Philadelphia.

OUTLINE. Report on a study of 134 males. Causes of infertility and methods of treatment discussed.

Discussion opened by BENJAMIN R. ALMQUEST, Pittsburgh.

Early Recognition of Pathology in the Genito-urinary Tract of Children (20 minutes).

HENRY T. PRICE, Pittsburgh.

OUTLINE. The author stresses the importance of thorough history and early recognition. Diagnosis of pyelitis, perinephritic abscess, foreign bodies, ureteral obstructions, and anomalies of ureter and bladder neck discussed from the standpoint of the pediatrician.

Urinary Obstruction in Infants and Children (55 minutes).

MEREDITH F. CAMPBELL, New York, N. Y. (Guest).

OUTLINE. High incidence of urinary tract obstruction in the young is inadequately appreciated. Most obstructions are congenital and many if untreated entail a high mortality. The clinical picture usually leads to the inadequate diagnosis of pyelitis, enuresis, chronic nephritis, or "weak kidneys." The indications and the facilities for special urologic examination are emphasized. Treatment based on etiology, and technically that employed in adults. Urinary sterilization as part of instrumental and surgical therapy will be stressed.

SECTION ON OBSTETRICS AND GYNECOLOGY

OFFICERS OF SECTION

Chairman—CLIFFORD B. LULL, Philadelphia.

Secretary—RAYMOND A. D. GILLIS, Pittsburgh.

Executive Committee—NORRIS W. VAUX, Philadelphia; T. KEVIN REEVES, Pittsburgh.

Reporter—MISS OLIVE M. CROW, 51 Madison Ave., New York, N. Y.

Tuesday, October 7, 2 p. m.

FORUM ROOM, 17TH FLOOR

Breast Carcinoma Complicating Pregnancy (Lantern Demonstration).

HOWARD A. POWER, Pittsburgh.

OUTLINE. This paper will discuss the frequency of breast carcinoma complicating pregnancy, and the influence of pregnancy on such concurrent carcinoma. An unusual case will be presented together with such statistics and conclusions as are available in the literature.

Discussion opened by JOSEPH A. HEPP, Pittsburgh.

2:25 p.m.

Experience with Vinethene as an Obstetric Anesthetic (Lantern Demonstration).

WILLIAM F. HARTMAN, Lancaster.

OUTLINE. A summary of the theoretic advantages of vinethene as an obstetric anesthetic followed by the study of a series of cases with special emphasis upon its efficiency, the absence of nausea in the mother, and the absence of anoxemia in the newborn infant.

Discussion opened by CLIFFORD B. LULL, Philadelphia.

2:50 p.m.

Simultaneous Multiple Primary Malignant Tumors (Lantern Demonstration).

BENDER Z. CASHMAN and MORTIMER COHEN, Pittsburgh.

OUTLINE. Multiple primary malignant growths in the same patient occur more frequently than is generally believed. Many are discovered only at autopsy. Simultaneous multiple growths are less common. Except in skin and colon the occurrence of multiple tumors of the same organ is much more rare. The occurrence of multiple growths is more frequent than can be explained by chance alone. They occur more frequently in the skin and lip, colon, the uterus, ovary, breast, and the genitourinary tract. Certain postulates must be fulfilled to establish the diagnosis of multiple primary growths. A report of 4 cases of simultaneous multiple primary growths treated by operation is made. Certain individuals and certain families show a tendency toward tumor formation, benign or malignant.

Discussion opened by HAROLD W. JACOX, Pittsburgh.

3:15 p.m.

Late Postpartum Complications (Lantern Demonstration).

GEORGE N. BALLENTINE, Williamsport.

OUTLINE. A review of 300 cases in which cervicitis, retroversion, cystocele, and rectocele are the late postpartum complications primarily investigated. The incidence of these complications and their symptomatology is stated. An analysis is made of the relationship of these postpartum complications with regard to such factors as age, weight, and parity of the mother, length of labor, weight of the baby, type of delivery, presence or absence of episiotomy, and postpartum treatment following a previous pregnancy. The type of treatment, the duration of the treatment, and the results obtained from the treatment of retroversion and cervicitis as found in this group of patients 6 weeks postpartum are also discussed.

Discussion opened by JOSIAH R. EISAMAN, Pittsburgh.

3:40 p.m.

Further Observations on the Significance of Nutritional Deficiency in Pregnancy.

WINSLOW T. TOMPKINS, Philadelphia (by invitation).

OUTLINE. The significance of nutritional deficiency in 1000 obstetric patients with an equal number of controls is reported together with a minimum optimum diet for pregnancy. The probable relationship between nutritional deficiency and the development of the so-called toxemias of early and late pregnancy is reported. The relationship between adequacy of maternal nutrition and prematurity and its importance is strongly suggested by the absence of prematurity. The absence of stillbirths and an incidence of only four-tenths per cent neonatal deaths are of probable significance. An optimum weight curve for pregnancy is also offered.

Discussion opened by HERBERT T. KELLY, Philadelphia.

4:05 p.m.

Evaluation of the Metranoikter in the Treatment of Dysmenorrhea (Lantern Demonstration).

S. LEON ISRAEL, Philadelphia.

OUTLINE. The relative inadequacy of endocrine agents and the limited usefulness of antispasmodic drugs in the treatment of essential dysmenorrhea are succinctly stated. The surgical procedures currently employed in the treatment of idiopathic dysmenorrhea are briefly discussed from the viewpoint of their general application. The historical background of prolonged dilatation of the cervical canal as a treatment of dysmenorrhea is rapidly reviewed. The technic governing the use of the Hirst metranoikter is described. The records of more than 100 dysmenorrheic women who were treated by means of the metranoikter at Mount Sinai Hospital, Philadelphia, during the past 15 years are statistically analyzed and the results of this form of treatment evaluated.

Discussion opened by FRED B. NUGENT, Reading.

4:30 p.m.

The Diagnosis and Treatment of Placenta Praevia (Lantern Demonstration).

JAMES L. REYCRAFT, Cleveland, Ohio (Guest).

OUTLINE. The diagnosis of placenta praevia has been made more accurate by the use of cystograms and placentography. A summary of this work is attempted, together with a review of a large number of cases of placenta praevia seen and treated at the Cleveland Maternity Hospital and the Cleveland City Hospital in the past 10 years.

Wednesday, October 8

CLUB FLOOR PARLOR, CLUB FLOOR

ELECTION OF SECTION OFFICERS

2 p.m.

Ovarian Tumors Complicating Pregnancy (Lantern Demonstration).

R. CHARLES NUCCI, Pittsburgh.

OUTLINE. An analysis of the cases of ovarian tumors complicating pregnancy during the past 12 years at Elizabeth Steel Magee Hospital. Because it may increase the probability of abortion, because it may constitute an insuperable obstacle to delivery, because of complications that may arise in the cyst itself, and finally, because after a spontaneous delivery it may still give rise to disturbances during the puerperium demanding its immediate extirpation, the presence of an ovarian tumor constitutes one of the menacing complications of pregnancy. Incidence, age, and gravidity, pathology, symptomatology, complications, diagnosis, and treatment will be considered seriatim.

Discussion opened by EVERETT M. BAKER, Pittsburgh.

2:25 p.m.

Supravesical Extraperitoneal Cesarean Section. Results in a Series of Patients Operated Upon by the Waters' Technic (Lantern Demonstration).

JOSIAH R. EISAMAN and (by invitation) BRUCE R. AUSTIN, Pittsburgh.

OUTLINE. An earlier paper has shown that the majority of deaths following cesarean section may be attributed to peritoneal complications, even in so-called clean cases. It is also made evident that the incidence of infection closely paralleled the extent of peritoneum exposed or traumatized. Neglect or errors of judgment may proscribe transperitoneal section and delivery must be accomplished by craniotomy, Porro section, or extraperitoneal section. Of these, extraperitoneal section is preferred. A series of patients operated upon by Waters' supravesical route is analyzed and an illustrated description of the operation included.

Discussion opened by PHILIP F. WILLIAMS, Philadelphia.

2:50 p.m.

Vaccination During Pregnancy (Lantern Demonstration).

J. BERNARD BERNSTINE, Philadelphia.

OUTLINE. This paper, the third of a series, shows the results obtained by vaccinating 500 unselected pregnant women with the puerperal vaccine. It deals with the complications met in these patients during the antenatal period, the number of injections, the types of delivery, and following their delivery. We present a comparative study of the morbidity statistics as compared with the nonvaccinated group. The number of days that these vaccinated patients stayed in the hospital are tabulated and compared with those of a nonvaccinated group. The newborn are also observed for abnormalities and possible effects, if any, due to the vaccination. Special cases that merit consideration are considered individually.

Discussion opened by NORRIS W. VAUX, Philadelphia.

3: 15 p. m.

Report of an Experiment in the Control of Cancer of the Uterus (Lantern Demonstration).

CATHARINE MACFARLANE, MARGARET C. STURGIS, and (by invitation) FAITH S. FETTERMAN, Philadelphia.

OUTLINE. Three years ago, members of the Department of Gynecology of the Woman's Medical College of Pennsylvania undertook to determine the value of periodic pelvic examination in the control of cancer of the uterus. One thousand well white women 30 years of age and over volunteered to help in the solution of this problem by coming for pelvic examination twice a year for 5 years. One thousand of these volunteers have been examined 3 times; 900 have been examined 4 times. Many have been examined 5 and 6 times. This report is based on the first 3900 examinations. In the first 100 examinations, one early cancer of the body of the uterus and 3 early cases of cancer of the cervix were discovered. In addition to these early cancers, 516 benign lesions of the pelvic organs were found. These benign lesions included 257 precancerous lesions of the cervix—leukoplakic areas, cervicitis, and cervicitis with erosion. Of these potentially serious lesions, 119 have received appropriate treatment and the menace of cancer has been removed. Besides these concrete findings, this experiment has convinced 1000 women, their relatives, and their friends of the value of periodic pelvic examinations.

Discussion opened by ZOE ALLISON JOHNSTON, Pittsburgh.

3: 40 p. m.

Rupture of the Gravid Uterus at or Near Term (Lantern Demonstration).

JOHN H. DUGGER, Philadelphia.

OUTLINE. A careful review has been made of the case records of the 105 patients who were treated for ruptured uterus at 31 different hospitals in the city of Philadelphia from 1931 to 1940 inclusive. The pertinent facts pertaining to age, race, obstetric history, prenatal care, period of gestation, incidence, time of rupture in relation to pregnancy, labor, and delivery were ascertained. Also the mode of onset of labor, the use of oxytocic drugs during labor, the method of delivery, the type and proof of rupture, the maternal and infant mortality and preventability have been determined and discussed. There were 65 maternal deaths from ruptured uterus. The case records were presented and discussed by the Maternal Welfare Committee of the Philadelphia County Medical Society. The Analysis Committee found that 54 per cent had inadequate or no prenatal care. The rupture occurred during labor or delivery in 96 per cent of the patients. An operative delivery occurred in 86 per cent of the patients. Only 5 or 7 per cent delivered spontaneously; 4 or 6 per cent of the patients died undelivered. Internal podalic version and extraction was the most frequent operative procedure associated with ruptured uterus and death. The maternal deaths were attributed to error in judgment or technic on the part of the attending physician in 50 or 76 per cent of the patients; 5 or 7 per cent of the patients' deaths were attributed to lack of co-operation or ignorance on the part of the patient; 10 or 15 per cent of the patients' deaths were considered as nonpreventable. The diagnosis and treatment will be discussed briefly.

Discussion opened by JAMES L. GILMORE, Pittsburgh.

4: 05 p. m.

The Influence of Infection on Abdominal Hysterectomy (Lantern Demonstration).

VIRGIL S. COUNSELLER, Rochester, Minn. (Guest).

OUTLINE. The clinical and hospital records of 2684 patients encountered consecutively from 1935 to 1939, who underwent abdominal hysterectomy for benign conditions, were reviewed; 258 of these patients presented gross evidence of infection at the time of operation and the presence of infection was confirmed microscopically by examination of the tissue removed; 179 of the 258 patients underwent total abdominal hysterectomy; 79 underwent subtotal abdominal hysterectomy. This report deals primarily with an analysis of the morbidity and mortality rates in this group of 258 cases. In addition, there were 20 cases of tuberculous pelvic infection. These figures are compared with those obtained from a similar analysis of 1497 "excellent risk" patients who underwent abdominal hysterectomy over the same number of years. The results show that in the presence of infection the operative mortality rate is increased 7 times; the incidence of pelvic cellulitis, abscess, and peritonitis is increased more than 6 times, and wound complications are increased 5 times. The results show that the safest procedure in the presence of infection is subtotal hysterectomy. Drainage of any type increases the morbidity rate but decreases the mortality rate.

SECTION ON CLINICAL LABORATORY MEDICINE

OFFICERS OF SECTION

Chairman—LLOYD E. WURSTER, Williamsport.

Secretary—HENRY F. HUNT, Danville.

Reporter—MISS EYLEEN MASSER, 51 Madison Ave., New York, N. Y.

Tuesday, October 7, 9: 30 a. m.

PARLOR 1 AND 2, CLUB FLOOR

Banti's Disease—Its Etiology and the Rationale of Splenectomy (Lantern Demonstration) (15 minutes).

LOUISA E. KEASBEY, Lancaster.

OUTLINE. For nearly 40 years splenectomy has been recommended for Banti's disease as being the form of treatment offering the most active benefits, not only decreasing the incidence and lessening the magnitude of the hematemeses which are part of this syndrome, and causing the altered blood values to return to normal, but actually appearing to retard or stay the progressive course of the hepatic cirrhosis often accompanying this splenomegaly. Banti's concept has been brought into ever-increasing question. The purpose of the present paper, then, is critically to review the literature as to the etiology and nature of Banti's disease with a view to determining the rationale of, the indications for, the contraindications to, and the benefits to be anticipated from splenectomy.

Discussion opened by FRANK W. KONZELMANN, Philadelphia (5 minutes).

9: 50 a. m.

The Relation of Hormones to the Development of Cancer (Lantern Demonstration) (15 minutes).

WILLARD S. HASTINGS, Philadelphia.

OUTLINE. There has developed a very considerable volume of experimental evidence of the production of cancer by large doses of certain hormones. Likewise, as knowledge increases regarding morphologic changes that occur physiologically in certain tissues as a result of hormone action, it can be concluded from study of some clinical cases that endocrines may have played a part in the development of malignancy. A similarity in chemical structure between some hormones and carcinogenic agents has been pointed out. Analysis of these observations and of the general problem leads, however, to the view that endocrines, and perhaps also many of the recognized carcinogenic chemical agents, do not produce cancer directly but merely bring about conditions under which neoplasia is more apt to develop from the influence of other factors.

Discussion opened by STANLEY P. REIMANN, Philadelphia (5 minutes).

10: 10 a. m.

Intern Laboratory Education in the General Hospital (Lantern Demonstration) (15 minutes).

HERMAN H. VAN HORN, Harrisburg.

OUTLINE. Responsibility of hospital management and department heads for intern's year of postgraduate education (courses in medical college were well planned and executed; the work of the intern should be equally well planned). For each department head this raises the question of what will be taught and how. Great variety of setups in general hospitals for intern laboratory education. The ideal setup: (a) definite outline of method, (b) physical equipment, (c) personnel relations, (d) principle of correlation throughout the intern's 8 weeks of work. Conclusion: The real tests of educational success, if any.

Discussion opened by W. DRURY HAWKINS, Harrisburg (5 minutes).

10: 30 a. m.

Food Aspiration Pneumonia (Lantern Demonstration) (15 minutes).

GEORGE H. FETTERMAN and THOMAS J. MORAN, Pittsburgh.

OUTLINE. The aspiration of food is a fairly common but little stressed factor in the pathogenesis of bronchopneumonia in the aged and debilitated and in mental patients. This report deals with the study of food pneumonia as observed in the Pittsburgh City Home and Hospitals over a 5-year period with reference to etiology, incidence, and gross and microscopic pathology. Both an acute pneumonic process and a chronic granulomatous reaction have been observed and studied. An attempt has been made at identification of the various food particles found.

Discussion opened by HOWARD H. PERMAR, Pittsburgh (5 minutes).

10:50 a.m.

The Evaluation of Triple Serologic Tests for Syphilis—Mazzini Test, Hinton Test, Kolmer Wassermann Test (Lantern Demonstration) (15 minutes).

LAURENCE C. MILSTEAD, Allentown.

OUTLINE. Charts are portrayed which indicate results of triple serologic tests performed at Homeopathic Hospital, Reading, and at a private clinical laboratory in Allentown. Tabulations include 1200 triple premarital tests; 500 triple tests on candidates for Selective Service draft; 1200 triple tests on 500 cases of syphilis. Objects of the presentation are to show that a method of representing triple test results by 3 initials is simple and expedient; that a consideration of the combined result of a triple test is of greater value than consideration of isolated results of individual tests in the serodiagnosis or sero-exclusion of syphilis, and more particularly, in the follow-up of treated cases; to show the percentage incidence of syphilis in a group of candidates for matrimony and for the Selective Service draft; and to compare the results of the triple tests as regards specificity and sensitivity.

Discussion opened by VERNER NISBET, Philadelphia (5 minutes).

11:10 a.m.

The Influence of Extraneous Factors on the Sedimentation Rate of Erythrocytes (Lantern Demonstration) (15 minutes).

WILLIAM P. BELK, Wynnewood.

OUTLINE. The influence on sedimentation rates of such factors as room temperature, aging of the specimens, anemia, etc., is found to be more important than is generally considered to be the case.

Discussion opened by RICHARD PHILIP CUSTER, Philadelphia (5 minutes).

11:30 a.m.

The Relationship Between Blood Cholesterol, Sugar Tolerance, and Basal Metabolism Rate in Thyroid Disease (Lantern Demonstration) (15 minutes).

KRIKOR YARDUMIAN, and (by invitation) NORMAN M. WALL, Pittsburgh.

OUTLINE. We feel that the value of cholesterol and sugar tolerance determination in the diagnosis of thyroid disease is doubtful and not satisfying. A really satisfactory test for blood cholesterol is still wanting. From our survey we shall be able to attribute more or less significance to the cholesterol and sugar tolerance test and thus evaluate the findings for the clinician who is seeking aids in his attempt to diagnose thyroid disease.

Discussion opened by IRVIN M. POCHAPIN, Pittsburgh (5 minutes).

11:50 a.m.

Pathology Among Institutionalized Psychotics (Lantern Demonstration) (15 minutes).

THOMAS K. RATHMELL, and (by invitation) MARSHALL M. LIEBER, Sharon.

OUTLINE. Review of autopsy findings from 420 examinations among institutionalized psychotics and incidence of the pathologic lesions encountered. The series is divided into 3 groups—those showing organic visceral changes which were probably incidental, those with demonstrable cerebral lesions, and those associated with contributory visceral changes. Studies from cases of pernicious anemia—visceral Pick's and mesenteric Hodgkin's. Organic visceral changes seen in 96.3 per cent of cases examined.

Discussion opened by ROBERT A. MATTHEWS, Philadelphia (5 minutes).

Tuesday, October 7, 2 p.m.

PARLORS 1 AND 2, CLUB FLOOR

ELECTION OF SECTION OFFICERS

2:30 p.m.

Roentgen Irradiation in the Treatment of Inflammations (Lantern Demonstration) (15 minutes).

EUGENE P. PENDERGRASS and PHILIP J. HODES, Philadelphia.

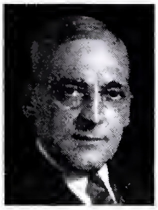
OUTLINE. The authors' experience with roentgen therapy in the treatment of infections, including a great number of acute and chronic conditions such as one would expect to find in large teaching hospitals.

Discussion opened by HAROLD WILLIAM JACOX, Pittsburgh (5 minutes).

2:50 p.m.

Has Preoperative Irradiation a Place in the Treatment of Renal Tumors? (Lantern Demonstration) (50 minutes).

CHARLES A. WATERS, Baltimore, Md. (Guest).



OUTLINE. Brief statistical report of curability of renal tumors. Differential classification by means of the pyelogram of those suitable for preoperative irradiation. Type most susceptible to irradiation. Histologic changes in the tumor as a result of irradiation; discussion of the operative removal following irradiation. Brief discussion of technic. How long a time should elapse after completion of treatment before removal? Survival rate of 25 cases.

3:40 p.m.

The Significance of Calcification Within the Gallbladder (Lantern Demonstration) (15 minutes).

SOLOMON P. PERRY, Sayre.

OUTLINE. The significance of calcification appearing within the gallbladder and attempts to demonstrate the fact that calcification in the gallbladder occurs not only in the presence of cystic duct obstruction. This applies also to calcification in the gallbladder wall, the so-called milk of calcium bile, as well as calcification in gallstones.

Discussion opened by WILLIAM J. CORCORAN, Scranton (5 minutes).

4 p.m.

The Renal Digestive Reflex—Its Practical Application to Some Clinical Problems (Lantern Demonstration) (15 minutes).

WILLIAM E. REILEY, Clearfield.

OUTLINE. Duodenal regurgitation has been studied by many experienced observers who have arrived at different conclusions as to its cause. In recent years silent kidney disorders have been shown to be present with symptoms in the gastro-intestinal tract. The latter have disappeared when the kidneys became normal. This report is based upon a study of 100 cases of duodenal regurgitation. Both the gastro-intestinal and urinary tracts were studied. The cause of the regurgitation appeared to be of kidney origin. An explanation of the mechanism by which gastro-intestinal symptoms are produced when reflex from the kidney is here offered.

Discussion opened by SYDNEY J. HAWLEY, Danville (5 minutes).

4:20 p.m.

Late Changes in Irradiated Skin (Lantern Demonstration) (15 minutes).

DONALD C. GORDON, Scranton.

OUTLINE. Those changes are considered which develop in irradiated skin long after subsidence of the usual radiation effects. The radiation modalities and the progress of the lesions are analyzed in several clinical examples and the morbid anatomy is studied through tissue preparation. Therapeusis and prognosis are examined.

Discussion opened by WILLIAM D. WHITEHEAD, Scranton (5 minutes).

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91st Annual Session
The Medical Society of the State of Pennsylvania
October 6 to 9, 1941, Pittsburgh, Pa.

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Single with bath	$3.00	With running water	$2.00
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Living room, bedroom, and bath suite	$6.00	$7.00	$8.00

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(Very large room, with bath—four single beds to a room, $1.50 per person; five or six to a room, $1.25 per person.)

THE SCIENTIFIC EXHIBIT

The 1941 scientific exhibit of The Medical Society of the State of Pennsylvania will occupy the Chatterbox floor of the Hotel William Penn. This floor can be reached by constant, convenient elevator service from the 17th floor—convention floor—or by steps from the lower lobby. The exhibits will be open on Monday at 1 p. m. and on Tuesday, Wednesday, and Thursday at 9 a. m.

Exhibits are presented by individual medical workers, hospital and university groups, and disease control committees of the State Medical Society.

By the use of a public address system, visitors will be directed to special demonstrations by individual exhibitors. A lounge area in the central portion of the exhibit hall will be an ideal place for visitors to meet their friends. The Package Library Service will occupy a space in the lounge section where doctors may acquaint themselves with the service offered by the Package-By-Mail Library Service of the State Society.

The exhibits this year are particularly practical in their presentation of many of the newer developments in medicine. Timely exhibits on the medical aspects of the relation of the physician to Selective Service will be shown. This includes the place of the physician with respect to selection of men for service and for home defense.

Artistically hand-engrossed *Awards of Merit* will be presented on Tuesday afternoon to the two exhibits which are adjudged by a review committee as ranking first and second in point of educational value and interest to the general practitioner of medicine.

Exhibits sponsored by committees or nonmembers of the State Medical Society, by outside groups, whether organized medical clinics, nonmedical groups, etc., or by previous prize-winning exhibits are not eligible for competition.

The following is a complete list of the exhibits which have been prepared:

Booth Number 101

Hodgkin's Disease

The exhibit presents the essential features of the theories of etiology, symptomatology, clinical course, x-ray therapy, and histopathology of the various types of Hodgkin's disease. These types include Hodgkin's disease of the mediastinum, retroperitoneum, lungs, gastro-intestinal tract, skin, bone, and brain. E. E. Aegerter and Henry Zwerling, Temple University, Philadelphia.

Booth Number 102

Problems in Pediatric Diagnosis and Management

The following motion pictures will be shown in the pediatric motion picture theater. The time for the showing of each picture will be posted at the entrance to the theater.

1. "The Visual Study of Whooping Cough."
2. "The Diagnosis and Treatment of Hypertrophic Pyloric Stenosis of Infancy," by Paul J. McGuire, Homestead.
3. "Activities at the Renziehausen Juvenile Diabetic Camp," by Leo S. Smelo, Pittsburgh.
4. "The Diagnosis and Management of Meningitis in Childhood," by Joseph S. Baird, Pittsburgh.
5. "Case Report: Four Boys with Pseudohypertrophic Muscular Dystrophy in One Family."
6. "Convalescence; a Neglected Field in Pediatric Management," by Theodore O. Elterich, Pittsburgh. Pittsburgh Pediatric Society.

Booth Number 103

Child Health

The exhibit indicates by the use of charts the counties participating in the work of the Child Health Committee. The functions of the committee are illustrated by transparencies. Statistical reports of the state and participating counties give the percentage of correction and present special studies of physical defects and corrections. CHILD HEALTH COMMITTEE, The Medical Society of the State of Pennsylvania.

Booth Number 104

Cancer Education for the Layman

The Women's Field Army is a volunteer organization whose aim is to help give laymen information on the subject of cancer. The exhibit consists of the following: (1) Transparencies showing some of the ways in which the facts concerning cancer may be taught to laymen. (2) The Cancer Woman, a model with cancer of the breast, will demonstrate by electric lights the areas to which metastases occur. (3) Six wax models illustrate the following: (a) cancer of the breast in a 32-year-old woman; (b) 3 models showing cervical erosion in contrast to one which shows well-developed cancer of the cervix; (c) cancer of the tongue showing the importance of oral hygiene; (d) early cancer of the lip; (e) advanced ulcerated cancer of the lip with metastasis to the neck glands. (4) Literature suitable for laymen will be on display. Women's Field Army, Pennsylvania Division, American Society for the Control of Cancer.

Booth Number 105

Shock Therapy

(1) Charts and diagrams showing advantages and disadvantages of various forms of shock therapy. (2) Results obtained in Pennsylvania institutions. (3) The details of treatment procedure will be shown in motion pictures. Committee on Mental Hygiene, The Medical Society of the State of Pennsylvania.

Booth Number 106

Save an Eye—Keep a Leg

The Primer on Diabetes (for physicians, allied professions, and laymen) will be ready for distribution and hospital forms demonstrated. Graphic presentation of the life history of the average diabetic will be the chief motive. The high morbidity and mortality of diabetes in Pennsylvania is a challenge to the organized profession. Complications are least likely in the diabetic under control. The evolution of diabetic complications is slower under partial control, but will occur as in the uncontrolled. The commission now asks the doctors to do something definite with their local problems. Résumés of treatment and statistics will be presented. The exhibit will be attended by commission and exhibit committee members who will be glad to meet doctors and discuss local problems. The Primer, motion picture, slide library, and hospital record forms are available to every visitor and the commission will welcome suggestions and constructive criticism. Commission on Diabetes, The Medical Society of the State of Pennsylvania.

Booth Number 107

Food Aspiration Pneumonia

Charts and photomicrographs from cases of food aspiration pneumonia are presented along with experimental material serving to outline the pathogenesis of this disease process. Thomas J. Moran and George H. Fetterman, Pittsburgh City Home and Hospitals, Mayview.

Booth Number 108

Neoplasms of the Lung and Their Complications

The exhibit consists of a radiographic serial study of cases with neoplasm of the lung and the various complicating conditions. Photographic reductions of radiographs, photographs of the gross pathologic specimens, and photomicrographs are presented. Maurice F. Goldsmith, Montefiore Hospital, Pittsburgh.

Booth Number 109

Plastic and Reconstructive Surgery

Exhibit of colored transparencies on transplantation of tissue. Exhibit of moulages. Hans May, Lankenau Hospital, Philadelphia.

Booth Number 110

Fungus Infections of the Feet and Scalp

By the use of charts and transparencies, the two most common types of ringworm of the scalp and ringworm of the feet will be differentiated. The clinical characteristics of each type of infection will be shown by transparencies. Cultural characteristics will be shown by culture growths. The importance of microscopic slides and differential diagnosis and an outline of treatment will be given. The Woods light will be demonstrated in the diagnosis and treatment of ringworm of the scalp. Townsend W. Baer and Herbert Friedlander, Department of Dermatology and Syphilology, University of Pittsburgh, Pittsburgh.

Booth Number 111

Abscess in and About the Liver

The exhibit consists of prints of roentgenograms illustrating abscesses in and about the liver after aspiration and replacement of the fluid removed, by iodized oil or by air, for localization of the abscess cavity. Charts illustrating the frequency, the mortality rate, and the results of different methods of treatment will be exhibited. C. Lee Wilmoth, Pittsburgh.

Booth Number 112

Giant Cell Formations in Inflammatory and Neoplastic Conditions

The exhibit consists of highly magnified microphotographs demonstrating giant cells in various neoplasms and also foreign body giant cells found in granulomatous infections. The purpose of the exhibit is to demonstrate that the morphology, size, shape, and number of nuclei and nucleoli are no criteria to differentiate the giant cell of a tumor from non-neoplastic giant cell formations. Furthermore, the presence of giant cells in a tumor will not help to differentiate a malignant tumor from a benign growth. It seems that the types of cells other than giant cells are more of a diagnostic criterion than the giant cells alone. Krikor Y. Yardumian, Department of Pathology, Montefiore Hospital, Pittsburgh.

Booth Number 113

Flexible Tube Gastroscopy

The exhibit consists of: (1) Apparatus containing a Wolf-Schindler flexible gastroscope, with a dial that may be turned to give the viewer a picture of the stomach as actually viewed through this instrument. (2) An automatic Balopticon showing in sequence slides of correlated gastroscopic and x-ray studies of a group of patients. (3) Motion picture showing examination of the patient with a flexible gastroscope. (4) A series of drawings made at the time of original examination through the gastroscope. C. Wilmer Wirts, Jr., Philadelphia.

Booth Number 114

Plastic and Reconstructive Surgery

The exhibit consists of a viewing box with transparent photographs illustrating various phases of plastic and reconstructive surgery. Other examples will be illustrated by colored wax models grouped to show treatment in (a) cancer of the face, (b) burn scar deformities, etc. S. M. Dupertuis, Department of Surgery, University of Pittsburgh, Pittsburgh.

Booth Number 115

Common Nail Disturbances

This exhibit is built around clinical photographs which illustrate: (1) Nails at various stages of life; (2) affections of nails resulting from systemic disease; (3) appearance of nails affected with ordinary dermatoses such as psoriasis, eczema, etc.; (4) nail infections, including onychomycosis. Attention is called to the importance of differential diagnosis. Treatment, depending on the cause of the nail affection, is presented. Lester Hollander, Charles L. Schmitt, and George F. Kowallis, Pittsburgh Skin and Cancer Foundation, Pittsburgh.

Booth Number 116

Small Town Health Control in the Civilian Defense Program

Placard description of a small town's efforts to organize health facilities during defense emergencies, allocate specific duties to specific individuals, community blood typing campaign, community diphtheria-tetanus campaign, educational program, newspaper training bulletins on nutrition, etc. Gerald S. Backenstoe, Department of Aviation Medicine, Sacred Heart Hospital, Allentown.

Booth Number 117

Cancer Prevention Research

Charts and models illustrate (1) the uterine cervix in health and disease, (2) cervical lesions before and after treatment. Catharine Macfarlane, Faith S. Fetterman, Margaret C. Sturgis, and Eleanor Scott, Woman's Medical College of Pennsylvania, Philadelphia.

Booth Number 118

Experimental Addison's Disease

Illustration of adrenal pathology in experimental animals, which is comparable or identical to that which occurs in certain forms of human Addison's disease. J. M. Rogoff and Miss E. Nola Nixon, Laboratory of Experimental Endocrinology, University of Pittsburgh, Pittsburgh.

Booth Number 119

Brain and Spinal Cord Tumors

The exhibit consists of colored photographs made at the operating table of varieties of intracranial and intraspinal pathologic lesions. The details of the form, color, and appearance of brain and spinal tumors as they are seen by the neurosurgeon are demonstrated. A description of the surgical treatment and prognosis of each group of tumors is afforded. Three colored films illustrating the operative technic for brain and spinal cord lesions complete the exhibit. Francis C. Grant, University Hospital, Philadelphia.

Booth Number 120

Intraspinal Lesions Causing Low Back Pain

The diagnosis, treatment, and results of operation of herniated intervertebral disk, lumbar arthritis, hypertrophied ligamentum flavum, and spinal cord tumor will be presented by means of charts, x-ray reductions, drawings, photographs, and pathologic specimens. Motion pictures will be used to illustrate the operative technic and the results obtained. Stuart N. Rowe, Western Pennsylvania Hospital, Pittsburgh.

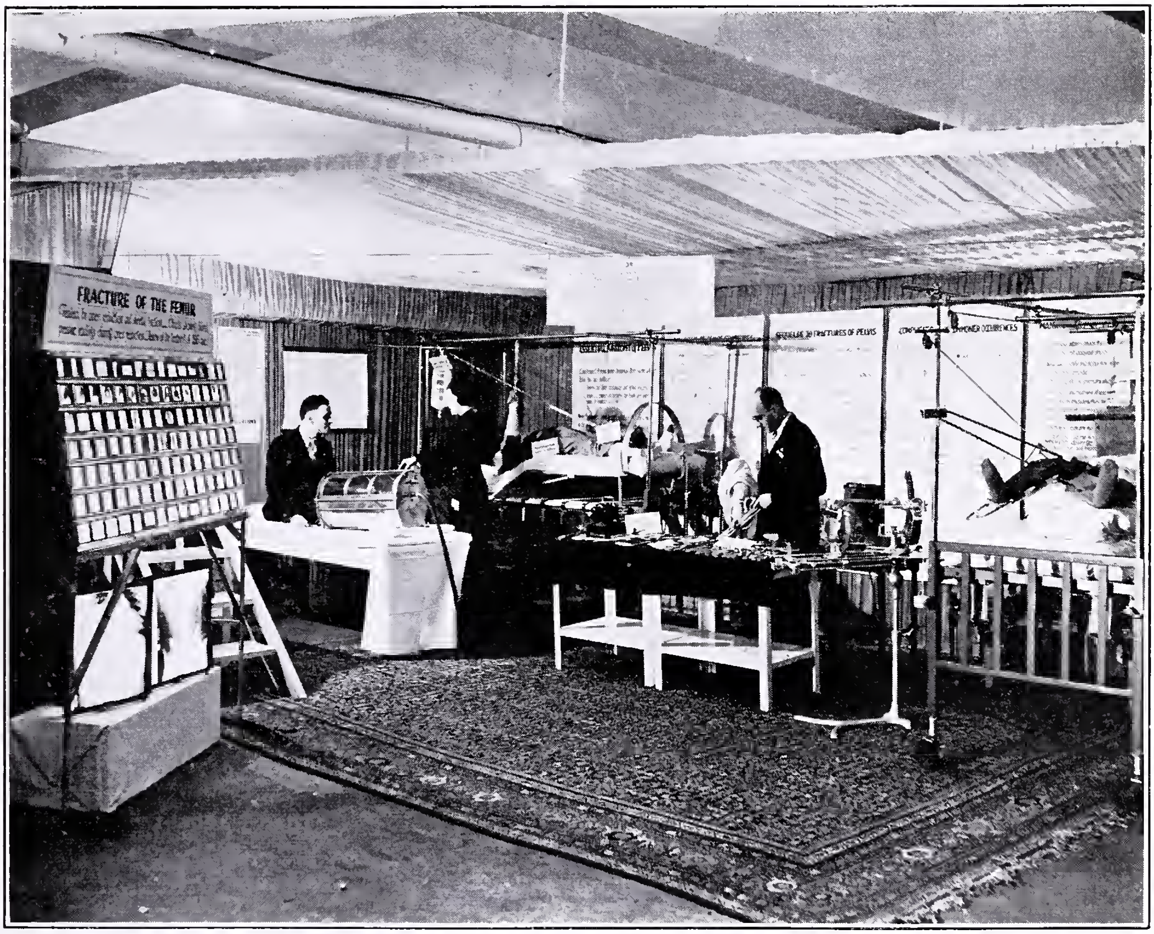


Exhibit on Complicated Fractures

Booth Number 121

The Problem and Treatment of Low Back Pain

Drawings illustrate the anatomic and mechanical factors causing or influencing pathology in the lower part of the back. Charts indicate the etiologic classifications, differential diagnosis, significance of symptoms, important points in history and examination, and indications for treatment. Conservative methods of treatment, especially the recumbent technic with a manikin, will be demonstrated. X-rays, casts, braces, etc., will be shown. Eben W. Fiske, St. Margaret Memorial Hospital and the Oliver Research Laboratory, Pittsburgh.

Booth Number 122

Segmental Pain and Tenderness

The exhibit consists of (1) case histories, etiology, diagnosis, and treatment; (2) therapy by means of postural correction, physical therapy, and nerve block; (3) two manikins (a) to demonstrate step by step the technic of nerve block, (b) to acquire actual technic of injection; (4) methods of controlling the intractable pain of alcoholic neuritis, tabies dorsalis, malignancy, etc. William Bates and Bernard Judovich, Graduate Hospital, University of Pennsylvania, Philadelphia.

Booth Number 123

New Laboratory Methods

(1) Estimation of total base in serum by means of the measurement of conductivity and specific gravity. (2) Determination of vapor pressure in serum and other biologic fluids. (3) Modification of the blood sedimentation method and the use of nomographic corrections of rate and blood value. (4) Laboratory service in gonorrhea control. F. William Sunderman, David H. Black, and James S. Forrester, William Pepper Laboratory, University of Pennsylvania, Philadelphia.

Booth Number 124

Therapeutics of Heat

This exhibit embraces both the physiologic and clinical effects of heat applications. The results of hyperpyrexia for the treatment of various diseases will be illustrated statistically in addition to the application of heat to various portions of the body. Methods of determining the efficacy of heat devices will be demonstated, including a comparative study of blood flow through the extremities of humans. Apparatus for these various applications will be shown and demonstrations will be made to acquaint the profession with this phase of therapeutics. Murray B. Ferderber and Samuel Sherman, University of Pittsburgh, Pittsburgh.

Booth Number 125

Diagnosis and Treatment of Toxic Goiter

The exhibit consists of the following: (1) Transparencies and slides showing methods of examination in hyperthyroidism with other photographs touching on differential diagnosis between toxic goiter and nervous states often confused with true hyperthyroidism. (2) The heart in toxic goiter. (3) The technic of bilateral resection and multi-stage operations in the treatment of hyperthyroidism illustrated by Kodachrome photographs. (4) Transparencies illustrating the pathologic states associated with acute crisis and in death from advanced hyperthyroidism. Harold L. Foss, George F. Geisinger Memorial Hospital, Danville.

Booth Number 126

Clinical Features of Cardiac Arrhythmias

The various defects of the mechanism of the heart which produce the commoner forms of arrhythmia are illustrated diagrammatically. Their recognition by clinical and electrocardiographic evidence is described. The treatment in the different types of disorder is outlined. Pennsylvania Heart Association.

Booth Number 127

Heart Sound Tracings with Electrocardiograms

Mounted sound tracings with electrocardiograms of the following type cases illustrate: (1) congenital heart block and acquired heart block; (2) auricular fibrillation before and after digitalization; (3) serial records of digitalis intoxication with recovery. Adolphus Koenig and Ellis W. Young, Presbyterian Hospital, Pittsburgh.

Booth Number 128

The Use of Pectin in Infected Wounds

Samples of pectin solution and the method of preparation will be shown. Graphs and charts will illustrate the method of administration and the response under pectin therapy. Morris A. Slocum and Dominic N. DiSilvio, St. Margaret Memorial Hospital and the Oliver Research Laboratory, Pittsburgh.

Booth Number 129

Photography in Medicine

1. A national exhibit is presented showing examples of various types of medical photography with the idea of raising the standards of illustrations in medical publications and exhibits. 2. Gross specimens, photomicrography, clinical records, color transparencies, and copy work are included, with examples of faulty and inadequate photography for comparison. Anne Shiras, Albert Levin, and Chester Henry, Biological Photographic Association, Pittsburgh.

Booth Number 130

Periodic Health Examinations

A film describing features of periodic health examinations will be shown. Specimens of periodic health examination blanks will be demonstrated and attending physicians will discuss the importance of periodic health examination. COMMITTEE ON PERIODIC HEALTH EXAMINATIONS, The Medical Society of the State of Pennsylvania.

Booth Number 131

Division of Health Education

An illuminated map shows the number and location of the tuberculosis sanatoria, tuberculosis clinics, pneumothorax stations, and venereal disease clinics in different portions of the state. A chart illustrates the organization of the department. Division of Health Education, Department of Health, Harrisburg.

Booth Number 132

Vitamin C in Nutrition

Vitamin C is a necessary factor in the diet of normal persons. It plays a particularly important part in maintaining normal nutrition in the following conditions: (1) pregnancy and lactation, (2) infections and toxic conditions, (3) diseases of the intestinal tract, (4) during the administration of certain drugs, (5) in the extremes of age and in chronic disease. The importance of studying the degree of vitamin C deficiency by the use of test methods and the method of correcting deficiency will be presented. Thomas W. McCreary, D. J. Alamprese, Earl Lory, Ph.D., and Clara R. Schlesinger, B.S., Pittsburgh Skin and Cancer Foundation and St. Margaret Memorial Hospital, Oliver Research Laboratory, Pittsburgh.

Booth Number 133

Medical Aspects of Nutrition

The exhibit consists of charts, case histories, and photographs summarizing nutritional failure, both clinical and subclinical, as follows: the classification, prevalence, diagnosis, mode of development, systems involved, prognosis, and treatment of nutritional failure. In determining therapy, factors of supply, factors of digestion and absorption, storage, disturbed distribution, and energy metabolism are considered. Also illustrated is a breakdown of the nutrilites essential to an adequate diet. COMMITTEE ON NUTRITION, The Medical Society of the State of Pennsylvania.

Booth Number 134

Medicine and Selective Service

The exhibit consists of (1) an animated display portraying graphically the medical function of Selective Service. (2) Charts attached to a manikin (three-fourths life size) describe the physical requirements for the various parts and organs of the body. (3) A large United States map shows counties of the United States with charts, diagrams, and pictures describing the work of Selective Service and the causes and percentage of rejections, etc. Major Robert A. Bier, U. S. Army, Leonard G. Rowntree, Chief, Medical Division, and Lieut. O. H. Folk, Statistical Division, Selective Service Headquarters, Washington, D. C.

Booth Number 135

Control of Lead Hazard in Industry

The exhibit consists of the following: (1) Charts on acute and chronic lead poisoning. (2) Apparatus for the dithizone method of lead determination. (3) Spectrograms showing the method of determining lead spectrographically. (4) Microscope and slides demonstrating basophilic aggregates in blood smear from a case of lead poisoning. T. Lyle Hazlett, Department of Industrial Hygiene, University of Pittsburgh, Pittsburgh.

Booth Number 136

Chest X-Ray Methods

The exhibit shows a comparison of various methods of making chest roentgenograms in private practice and for mass surveys, with brief comments on advantages and disadvantages of each method. The methods included are: fluoroscope, single film 14 x 17 inches, stereoscopic films, paper roll, fluorography with 35 mm.

Package Library, 230 State Street, Harrisburg film, and fluorography with 4 x 5 inch film. Each method will be shown by (1) a diagram illustrating the basic physical principles, (2) a photograph of the apparatus, (3) actual x-ray, and (4) brief comments. The x-ray films and photographs are all of the same case. Committee on Tuberculosis of The Medical Society of the State of Pennsylvania, and the Pennsylvania Tuberculosis Society.

Booth Number 137

Clinical and Laboratory Studies of Male Sex Hormones (Androgens)

The exhibit consists of the following: (1) Excretion of androgens in 6 eunuchoid males before treatment with subcutaneous pellets of testosterone and during treatment. (2) The influence on secondary sexual development, physical changes, somatic and psychologic improvement is demonstrated by means of charts, clinical photographs, and colored slides. (3) Photographs and slides showing hirsutism in the female and demonstrating its association with androgenic and estrogenic excretion. (4) Laboratory methods exhibited and evaluated by means of photographs, charts, and descriptive legends. An automatic colored slide projector will show interesting clinical and laboratory findings throughout the exhibit. Robert C. Grauer, Maitland Alexander, Jr., William Starkey, Ph.D., and Eleanor Saier, M.S., W. H. Singer Research Laboratory, Allegheny General Hospital, Pittsburgh.

Booth Number 138

Fertility in the Male

Exhibit of statistics, charts, drawings, microscopic slides, and photographs showing a summary of 151 cases of male fertility examinations. Motion pictures of epididymovasostomy and hypospadiac operations. Also, a motion picture of the impotence operation. Stained slides of abnormal sperm. Model of the epididymovasostomy operation. Causes of infertility shown as chronic prostatitis, syphilis, chronic inflammatory conditions, anatomic defects, and endocrine disorders. Henry Sangree, Leonard D. Frescoln, Sara Howarth Maiden, and George Alan Hahn, University of Pennsylvania and Woman's Medical College of Pennsylvania, Philadelphia.

Booth Number 139

Clinical Cystoscopic Photography

Demonstration of camera and technic of photography of vesical neck and bladder lesions through various types of cytoscopes. Projection of colored photographs. John L. Hamilton, Allegheny General Hospital, Pittsburgh.

Booth Number 140

Package Library Service

This exhibit will show, by means of reprints and sample packages, the type of service which is being given to our Pennsylvania physicians. The librarian will be prepared to answer questions concerning the system used and to receive requests and explain how they are filled. Package Library Service, The Medical Society of the State of Pennsylvania.

Booth Number 141

Cesarean Section

Exhibit of sculptured models depicting the pathologic anatomy and operative technic involved in the common operations for cesarean section. Special steps in technic and indications for operations are shown in wash drawings. A letter chart will point out the more common indications for and contraindications to the operations, with a letter chart on the use of the roentgen ray in determining indications. Photographs will illustrate a case of double vagina, cervix, and double uterus, with pregnancy occurring in one uterus and spontaneous rupture of the same uterus with a second pregnancy. Pittsburgh Obstetrical and Gynecological Society, Pittsburgh.

Booth Number 142

The Ocular Fundus in Hypertension and Nephritis

Colored retinal photographs will be shown with discussion, and with a résumé of history and laboratory findings in cases of hypertension and nephritis. Charles F. Kutscher, Western Pennsylvania Hospital, Pittsburgh.

Booth Number 143

Routine Use of the Hematocrit

The routine use of the hematocrit with a description of the apparatus and a survey of the sedimentation rate in various diseases is presented by the use of charts. P. M. Menlowe, McKeesport Hospital, McKeesport.

Booth Number 144

The Use of Helium in the Prevention of Fire and Explosion with Combustible Anesthetic Agents

The exhibit will consist of (1) a graph showing explosive ranges of cyclopropane-oxygen-helium mixtures, ether-oxygen-helium mixtures, ethylene-oxygen-helium mixtures; (2) charts showing the ignition temperature of various combustible anesthetic agents and the limits of flammability of combustible anesthetic agents; (3) graphs showing cyclopropane-ethylene-oxygen mixtures and the flammable limits by static and induction coil spark ignition of cyclopropane-oxygen-helium mixtures. George J. Thomas and George William Jones, University of Pittsburgh, St. Francis Hospital, and the U. S. Bureau of Mines, Pittsburgh.

Booth Number 145

Sulfanilamide in the Prevention of Postoperative Meningitis

Descriptive charts and photographs of experimental and clinical data illustrate the intracranial implantation of powdered sulfanilamide in the prevention of postoperative meningitis. Emphasis will be placed on the value of this method in the treatment of head injuries. Y. D. Koskoff and N. Wall, Montefiore Hospital, Pittsburgh.

Booth Number 146

Indications, Relative Efficacy, and Toxicity of Sulfonamide Drugs

Charts and diagrams list the various diseases against which the sulfonamide drugs have been of value. The efficacy of the different sulfonamides against various types of infection is compared and the toxic side effects are listed and evaluated. Paul Gross, Frank B. Cooper, M.S., and Marion L. Hagan, Western Pennsylvania Hospital, Pittsburgh.

THE TECHNICAL EXHIBIT

◆

The Abbott Laboratories
North Chicago, Ill.

Booth 29

You are heartily invited to discuss the newer specialties with the Abbott-trained professional representatives in attendance. The wide assortment of products displayed in this exhibit merit your attention and study. Your questions are solicited.

American Hospital Supply Corporation
Chicago, Ill.

Booth 75

Do not fail to see the demonstration of the new, amazingly simple, and safe technic for the preparation of plasma and serum with Baxter Centri-Vac and Plasma-Vac containers. Two other well-known Baxter products, the Transfuso-Vac and intravenous solutions in Baxter Vacoliters, will be demonstrated also.

Aurex Pittsburgh Company
Pittsburgh, Pa.

Booth 21

The newest developments in wearable, vacuum tube hearing aids will be displayed at the Aurex booth. Your close inspection and inquiries are invited.

Mr. H. F. Andre will explain Aurex "Precision-Fitting" to each patient's individual requirements, as indicated by his or her particular hearing loss.

Of particular interest is the new Aurex bone conduction instrument, believed to be the only all-crystal amplifier and receiver available today. Aurex successful adaptation of the high-fidelity response of crystal is based on entirely new principles of bone conduction receiver design. It has accomplished substantial reductions in size and weight, while assuring a wider range of accurate response.

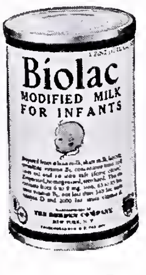
The Baker Laboratories
Cleveland, Ohio

Booth 50

Baker's complete line of infant foods, indicating the newer trends in modern infant feeding, will be on display. Baker's Modified Milk, powder and liquid, is a completely modified milk in which the composition of the essential food elements has been so altered and adjusted as to closely approximate breast milk. Melcose, a completely prepared liquid milk, is very economical. Melodex, maltose and dextrin, is made especially for modifying fresh or evaporated milk.

The Borden Company
New York City

Booth 9



At this booth you will see infant foods made entirely from Board-of-Health-inspected milk and designed specifically for infant formulas. Biolac, the distinctive new *liquid* infant food, affords convenience, economy, and optimal nutrition; it is sterile and requires simply dilution with boiled water to make a complete formula. Preparation of the feedings for the whole day is done in only 15 minutes. Beta Lactose is *nature's* carbohydrate in an improved, readily soluble form. Dryco provides *formula flexibility* for every feeding problem. Klim, Merrell-Soule Products, and Irradiated Evaporated Milk will also be on display.

Cambridge Instrument Company
New York City

Booth 44

Cameron Surgical Specialty Company
Chicago, Ill.

Booth 63

See the new Cameron-Schindler Flexible Gastroscope, the Color-Flash Clinical Camera, the Projectoray, the Mirrolite, and latest developments in electrically lighted diagnostic and operating instruments for all parts of the body. Of special interest will be the new inexpensive office model Radio Knife, Combination Spark Gap and Tube Electrosurgical Unit, and other electrosurgical units for cutting, coagulating, desiccation, fulguration, and ultraviolet therapy in all sizes from the office model to the hospital unit with an abundance of power for the most radical surgery.

S. H. Camp and Company
Jackson, Mich.

Booth 49

A series of anatomical drawings by Tom Jones will be exhibited as the central theme of this display. This company's authorized dealers are equipped to serve patients for the various supports prescribed by physicians. The complete line of merchandise for prenatal, postnatal, visceroptotic, sacro-iliac, hernial, and other specific conditions will be shown. Experts from the Camp staff will be in attendance to answer questions.

Ciba Pharmaceutical Products, Inc.
Summit, N. J.

Booth 38

At this booth will be found the well-known specialties of Ciba Pharmaceutical Products, Inc., including Coramine, Nupercainal, Digifoline, Trasentin, etc. Latest information concerning Perandren, Di-Ovocylin, and our gynecogenic preparations will be available, together with literature describing their clinical application where androgenic and estrogenic therapy is indicated. A representative of the firm will be in attendance and will be glad to answer any questions in regard to the products displayed.

The Coca-Cola Company
Atlanta, Ga.

Booths 2 and 3

Coca-Cola will be served to the delegates with the compliments of The Coca-Cola Company.

Conformal Footwear Company
St. Louis, Mo.

Booth 25

An amazing new experience awaits you here—a free trial fitting in the revolutionary Conformal Personalized Shoe which is actually moulded to fit and support your individual arches by an exclusive plastic process—while you wait! You will see how Conformal's patented plastic innersole automatically provides individually balanced support in a way never before possible. Conformal shoes are being worn and recommended by more and more physicians because of their remarkable success in relieving foot ailments and fatigue in even the most extreme cases. You may purchase "Conformals" at this booth at a special professional discount during the convention.

Davies, Rose & Company, Ltd.
Boston, Mass.

Booth 30

The members of The Medical Society of the State of Pennsylvania, being regularly visited by our representative, Mr. Arthur W. Hunt, are made acquainted with our preparations and our constant effort to provide the physician with therapies of uniform strength and quality. Those who attend the ninety-first annual session are asked to visit our exhibit where a cordial greeting will be extended them by our Mr. Hunt.

F. A. Davis Company
Philadelphia, Pa.

Booth 26

R. B. Davis Sales Company
Hoboken, N. J.

Booth 13

You are invited to enjoy a drink of delicious Cocomalt at this booth. Cocomalt is refreshing, nourishing, and of the highest quality. It is fortified with vitamins A, B_1, and D; calcium and phosphorus to aid in the development of strong bones and sound teeth; iron for the blood; protein for strength and muscle; and carbohydrate for energy.

DePuy Manufacturing Company
Warsaw, Ind.

Booth 20

You are invited to visit this exhibit where many new fracture appliances and bone instruments will be on display. Our representative in charge will be glad to answer any of your questions.

Doho Chemical Corporation
New York City

Booth 27

Animated pathologic ear exhibit. The Auralgan exhibit consists of a model of the human auricle 4 feet high together with a series of 24 three-dimensional ear drums, modeled under the supervision of outstanding otologists. Each of these drums depict a different pathologic condition based upon actual case observation and prepared, insofar as possible, with strict scientific accuracy so as to be highly instructive and interesting to all physicians.

Endo Products, Inc.
Richmond Hill, N. Y.

Booth 7

Our representatives will be present to discuss the many time-tested and newer pharmaceuticals bearing the Endo seal. Our exhibit includes panoramas from our research and production laboratories, illustrating the skill and care which go into the making of an Endo ampule or pharmaceutical.

The production of Endo hormone and vitamin products will be described by our representatives.

The Robert A. Fulton Company
Pittsburgh, Pa.

Booth 15

General Electric X-Ray Corporation
Pittsburgh, Pa.

Booth 23

Gerber Products Company
Fremont, Mich.

Booth 47

Gerber's new oatmeal, cooked, dried, and ready to serve, will be on display. There are now two precooked dry cereals, one a wheat, the other an oatmeal cereal. Of the canned foods, there are both strained and junior or chopped foods.

Booklets available for distribution to mothers or patients on special diets as well as professional literature will be sent to registrants for examination.

The Gilliland Laboratories, Inc.
Marietta, Pa.

Booth 16

The Gilliland Laboratories will display the biological products in which they specialize. This firm produces anti-pneumococcic rabbit serum, Types 1 to 34 inclusive, and holds the contract with the Pennsylvania State Department of Health. Among the products on display will be tetanus antitoxin, bovine origin, concentrated and refined, indicated for use in patients allergic to horse serum. Other products of the laboratories include diphtheria, gas gangrene, scarlet fever, tetanus, and tetanus-gas gangrene antitoxins; diphtheria toxoid, tetanus toxoid, tetanus-diphtheria toxoid combined (alum precipitated); bacterial vaccines, smallpox vaccine, and nearly all the biologicals used routinely by the medical profession.

All physicians and guests are cordially invited to visit this exhibit and discuss their problems regarding biologicals with the representatives in attendance.

H. J. Heinz Company
Pittsburgh, Pa.

Booth 69

The makers of Heinz Strained and Junior Foods appreciate the confidence which the members of The Medical Society of the State of Pennsylvania have expressed in their recommendation of these foods for infant feeding and special diets. Some of these foods will be on display, as well as various literature, the newest of which is the tenth edition of the Nutritional Chart and Nutritional Observatory. The Heinz representatives are at your service and will welcome members and guests at the exhibit.

Members and friends of the State Society are cordially invited to visit the Heinz kitchens, open daily except Saturday and Sunday, between 9 a. m. and 3 p. m.

Kalak Water Company of New York, Inc.
New York City

Booth 68

Visit the Kalak Water booth and ask the representative how Kalak Water may be employed to minimize the discomforts that so frequently follow the administration of the sulfonamides. Ask the representative to serve you with a glass of Kalak Water and learn for yourself how delicious and refreshing Kalak Water really is when it is served properly chilled.

Kelley-Koett Manufacturing Company, Inc.
Covington, Ky.

Booth 11

Kellogg Company
Battle Creek, Mich.

Booth 6

Kellogg's ready-to-eat cereals have an important part in the dietary program. Corn Flakes and Rice Krispies are included freely in wheat-free and low residue diets. Pep has been enriched with vitamins B_1 and D. Kellogg's other whole wheat and bran cereals—Wheat Krispies, Krumbles, Shredded Wheat, All-Bran and Bran Flakes—are rich in minerals and vitamin B, too. Reprints covering recent research with bran and nutrition leaflets will be available at the Kellogg exhibit.

Lederle Laboratories, Inc.
Philadelphia, Pa.

Booth 57

You are cordially invited to visit this booth, which will feature colored slides on the refining of antitoxins. These slides were taken from a new motion picture film on this subject.

There will be exhibited the many specialties for which this firm is noted and the latest releases on sulfonamide drugs. Literature on the various sulfonamides will be available.

The Liebel-Flarsheim Company
Cincinnati, Ohio

Booth 55

The well-known line of L-P Short and Ultra-Short Wave Generators, the famous Bovie Electrosurgical Units, and other new and useful electromedical apparatus will be exhibited.

You are cordially invited to stop and have this equipment demonstrated to you.

Eli Lilly and Company
Indianapolis, Ind.

Booth 62

The germicidal efficacy of "Merthiolate" (Sodium Ethyl Mercuri Thiosalicylate, Lilly) and the compatibility of the antiseptic with body cells and fluids will be demonstrated. Other new and useful products will be featured.

J. B. Lippincott Company
Philadelphia, Pa.

Booth 22

New Lippincott books of interest to every physician are Grollman's *Essentials of Endocrinology,* Tobias' *Essentials of Dermatology,* Haden and Thomas' *Allergy in Clinical Practice,* and Youmans' *Nutritional Deficiencies.* Leaman's *Management of the Cardiac Patient,* today's sales leader, will be displayed, as will Thorek's 3-volume *Modern Surgical Technic.* New editions of Kracke's *Diseases of the Blood and Atlas of Hematology* and Goldthwait's *Body Mechanics* will also be shown, as well as the rest of the important Lippincott books.

McIntosh Electric Corporation
Chicago, Ill.

Booth 39

McKennan Drug Company, Inc.
Pittsburgh, Pa.

Booth 10

Physicians together with pharmacists, dentists, and nurses are dedicated to the task of conserving the public health. As pharmacists, this firm is proud of its part in this great public health venture. They limit themselves strictly to the task of purveying drugs and medicines to physicians and their patients. Their activity is solely the ancient and fine art of the apothecary.

McNeil Laboratories, Inc.
Philadelphia, Pa.

Booth 56

On exhibition will be an original first edition of Dr. William Withering's *An Account of the Foxglove and Some of its Medical Uses, etc.* This first published work on the use of digitalis in scientific medicine was printed in the year 1785 at Birmingham, England. Also on display will be Digitalis *Duo-test,* the uniform cardiac stimulant tested by the frog (U.S.P.) method and check-tested by the guinea pig (Reed-Vanderkleed) method. Our representatives will exhibit also other outstanding McNeil pharmaceuticals and eagerly look forward to your visit.

McNEIL
TRADE MARK
ESTABLISHED 1879

M & R Dietetic Laboratories, Inc.
Columbus, Ohio

Booth 35

Similac, a completely modified milk specially prepared for infants deprived either partially or entirely of breast milk, will be featured. Competent representatives will be pleased to discuss the value of the zero curd tension of Similac as it applies to both the normal and special feeding cases or answer any related questions. You are invited to visit this exhibit.

The Maltbie Chemical Company
Newark, N. J.

Booth 42

Mead Johnson & Company
Evansville, Ind.

Booths 65, 66, and 67

Mead Johnson and Company will display several new products, including Mead's Menadione in Oil Capsules (vitamin K); Mead's Riboflavin Tablets, 1 mg.; Mead's Ascorbic Acid Tablets, 100 mg., scored tablets.

In addition, they will exhibit some interesting charts showing the importance of routine iron and vitamin B complex supplementation during the first two years of life.

Medical Case History Bureau
New York City

Booth 1

Simplifying the doctor's history record and bookkeeping system with the Info-Dex Record Control System.

Maintenance of accurate, informative data on both history and financial records is essential in the modern physician's practice. The Info-Dex Record Control System helps to keep a constant finger on the physical and financial pulse of the patient. This system correlates information almost automatically for instant reference and research work. Its method of cross-indexing interesting cases according to the disease is unique and exclusive.

The Medical Case History Bureau of New York City has specialized for many years in record forms for the physician's office. Their well-informed representative will gladly demonstrate the Info-Dex System and discuss your office problems. Miss Miriam Zion in charge.

The Medical Protective Company
Fort Wayne, Ind.

Booth 24

The Medical Protective Company invites you to visit its booth. Medical Protective Service is an institution of the medical profession whose legal liability problems we have concentrated upon for 42 years. Bring your professional liability questions and problems to us.

Mellin's Food Company
Boston, Mass.

Booth 34

Physicians are cordially invited to call and to place before our representatives all questions regarding the composition of Mellin's Food and its usefulness in infant and adult feeding. It is suggested that constipation in infancy and the preparation of nourishment for adult patients who are far below normal as a result of prolonged illness or faulty diet are particularly interesting topics for discussion.

The Wm. S. Merrell Company
Cincinnati, Ohio

Booth 70

The Merrell exhibit will feature Oravax, the oral catarrhal vaccine in enteric-coated tablets for protection against the common cold, as well as other new prescription specialties of timely interest. Merrell representatives will be at the booth ready to show these products and answer any questions.

The C. V. Mosby Company
St. Louis, Mo.

Booth 36

Physicians and surgeons attending the 1941 convention of The Medical Society of the State of Pennsylvania are cordially invited to visit this exhibit where there will be displayed, among others, the following new publications: Ritchie's *Essentials of General Surgery,* Blair-Moore-Byers' *Cancer of the Face and Mouth,* Willius' *Mayo's Cardiac Clinics,* and Kilduffe-DeBakey's *The Blood Bank and the Technic and Therapeutics of Transfusions.* New 1941 editions will include Crossen and Crossen's *Diseases of Women,* Jeans-Marriott's *Infant Nutrition,* Clark's *Positioning in Radiography,* and Bard's *Macleod's Physiology in Modern Medicine.* Three new additions to our popular Synopsis Series will also be shown.

Mutual Pharmacal Company
Syracuse, N. Y.

Booth 51

A variety of special products will be exhibited. These will include Tablets Riboflavin, Thiamin Hydrochloride, Aminophyllin with special coating, Liv-Ferin, Vita-Liv-Ferin, Ferrous Sulfate with Vitamins, Almutal, Phemutal, Rheumutal, etc., also, Solution Liver Extract, Injectable, Elixir Thia-Mutal, and other preparations of interest to physicians.

The National Drug Company
Philadelphia, Pa.

Booth 78

Immunizing agents of dependable potency and concentration for use in the program of contagious disease control will be prominently displayed at Booth 78. The complete biological service will be demonstrated in the order of immunization as advocated in present-day practice.

Among new items is included Allantomide, Allantoin Ointment with Sulfanilamide, National. Photographic case histories and charts will graphically present the clinical background and results to the physician.

Trained representatives will be in attendance to furnish information on the complete line of biological, biochemical, and pharmaceutical products.

Nestle's Milk Products, Inc.
New York City

Booth 31

This attractive exhibit will feature Lactogen, which has given successful results in infant feeding for many years. All physicians interested in infant feeding are invited to visit this booth.

Parke, Davis & Company
Detroit, Mich.

Booth 64

Featured in this exhibit will be the sex hormones, theelin and theelol; antisyphilitic agents, such as mapharsen and thiobismol; posterior lobe preparations, including pituitrin, pitocin, and pitressin; and various adrenalin chloride preparations.

Pet Milk Sales Corporation
St. Louis, Mo.

Booths 32 and 33

An actual working model of a milk condensing plant in miniature will be exhibited. This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the Pet Milk booth.

Petrolagar Laboratories, Inc.
Chicago, Ill.

Booth 5

In addition to samples of the 5 types of Petrolagar, an interesting selection of descriptive literature and anatomical charts will be offered. Ask the Petrolagar representatives to show you the Habit Time booklet. It is a welcome aid for teaching bowel regularity to your patients.

Philip Morris & Company
New York City

Booth 53

The method will be demonstrated by which it was found that Philip Morris cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. The representatives will be happy to discuss the researches on this subject and the problems on the physiologic effects of smoking.

The Chas. H. Phillips Chemical Company
New York City

Booth 43

"Phillips' Milk of Magnesia" (liquid and tablet forms) and "Haley's M-O"—standards in the field of alkaline laxative therapy—will feature this exhibit. Visitors are invited to visit this booth to receive samples of these famous products.

Picker X-Ray Corporation
New York City

Booth 59

Visitors to this exhibit will have an opportunity to see the well-known Picker-Waite "Century." This diagnostic unit provides for radiography and fluoroscopy in all positions from the vertical to the Trendelenburg. The table may be either hand or motor operated and the table has as optional equipment a two-position spot film attachment for instantaneous radiography during fluoroscopy.

Pittsburgh District Dairy Council
Pittsburgh, Pa.

Booth 14

E. J. Rose Manufacturing Co., Inc.
Philadelphia, Pa.

Booth 28

One of the oldest and largest companies in the physiotherapy field will exhibit their complete line of Short Wave Diathermies, Genuine Cold Quartz Ultra Violet Lamps, Electro-Surgical Units, and High Frequency Units. The E. J. Rose Manufacturing Company not only guarantees all of their products but also gives prompt service and instructions in the use of all their equipment. You will receive a cordial welcome at Booth No. 28.

Sanborn Company
Cambridge, Mass.

Booth 48

This exhibit will include the new Sanborn Cardiette with "Insomatic" operation and a double check on "timing" accuracy; the Stetho-Cardiette for simultaneous heart sound and electrocardiogram recording; the Cardioscope for visual electrocardiography; the 1941 Waterless Metabolism Tester offering improvements in convenience, in portability, and in patient comfort through easier breathing; and a proposed Oscillometer and recording blood pressure apparatus.

Sandoz Chemical Works, Inc.
New York City

Booth 73

Newly released products include Syrup "Neo-Calglucon" (calcium gluconogalactogluconate), a palatable highly concentrated preparation for oral calcium therapy readily absorbed from the digestive tract; Cedilanid, a stable preparation of lanatoside C, a crystalline glycoside from Digitalis lanata not present in purpurea. Other members of the Sandoz group of pure cardioactive glycosides include Digilanid, Strophosid, Scillaren, and Scillaren-B. Physicians will also be interested in Gynergen (ergotamine tartrate) for the dramatic relief of migraine headache; Bellergal, Belladenal, and Bellafoline, sedatives of the neurovegetative system.

W. B. Saunders Company
Philadelphia, Pa.

Booth 45

This publishing house will have on display their complete line of books of interest to physicians and specialists. Of particular interest are Ladd & Gross' *Abdominal Surgery of Childhood,* Kolmer & Tuft's *Clinical Immunity, Biotherapy, and Chemotherapy,* Graybiel & White's *Electrocardiography in Practice,* the new Griffith & Mitchell's *Pediatrics,* Krusen's new *Physical Medicine,* Novak's *Obstetrical and Gynecological Pathology,* Walters & Snell's *The Gallbladder and Its Diseases,* Lewin's *Infantile Paralysis,* Steinbrocker's *Arthritis,* Johnstone's *Occupational Diseases,* Pelouze's *Office Urology,* the new Cecil's *Medicine,* the new Ewing's *Neoplastic Diseases,* Wilder's *Clinical Diabetes,* the current series of the *Medical Clinics of North America* and of the *Surgical Clinics of North America* with their symposia on common, everyday diseases and conditions, and a number of other important new books and new editions.

Scheer X-Ray Sales Company
Pittsburgh, Pa.

Booth 19

Your Mattern dealer will exhibit the 100 M.A. push-button control stand with hand-tilt table, a combination x-ray and fluoroscopic unit, also combination mobile and portable x-ray units. You are invited to inspect this apparatus.

Schering Corporation
Bloomfield, N. J.

Booth 46

This exhibit will include real and striking recent advances such as Sulamyd, highly effective sulfacetimide of considerably lower toxicity; *orally* active sex hormones Oreton-M, Progynon-DH, and Pranone tablets; efficient Baravit for bulk-plus-vitamin laxative therapy; and the new physiologic antacid, Ludozan tablets, actually forming a true protective gel in your patient's stomach. In addition, all the other highly advanced Schering hormones will be on display at the Schering exhibit, which is practically a survey of recent endocrine progress. These preparations are distinguished for their potency, absolute purity, and economy in actual practice. Research staff members will be present and will welcome discussion of problems. Literature will be available upon request.

Sharp & Dohme, Inc.
Philadelphia, Pa.

Booth 61

A new modern display will be offered this year featuring Delvinal sodium, Lyovac normal human plasma, Lyovac bee venom solution, and other Lyovac biologicals. There will also be on display a group of new biological and pharmaceutical specialties prepared by this house, such as propadrine Hydrochloride products, Rabellon, Padrophyll, Riona, Depropanex, and Ribothiron. Capable, well-informed representatives will be on hand to welcome all visitors and furnish information on Sharp & Dohme products.

S. M. A. Corporation
Chicago, Ill.

Booth 4

An interesting new display is provided, which represents the selection of infant feeding and vitamin products of the S. M. A. Corporation. Physicians who visit this exhibit may obtain complete information, as well as samples, of S-M-A Powder and the special milk preparations—Protein S-M-A (Acidulated), Alerdex, and Hypo-Allergic Milk.

Smith, Kline & French Laboratories
Philadelphia, Pa.

Booths 71 and 72

This year, Smith, Kline & French Laboratories begin their second century of service to the medical profession. The members of The Medical Society of the State of Pennsylvania are cordially invited to visit this exhibit and discuss the products displayed. These will include Benzedrine Inhaler, Benzedrine Sulfate Tablets, Benzedrine Solution, and Pentnucleotide. Mr. H. Osborne Walton will be in charge.

Sonotone Pittsburgh Company
Pittsburgh, Pa.

Booth 17

E. R. Squibb & Sons
New York City

Booth 58

A number of new and interesting chemotherapeutic specialties, vitamin, glandular, and biological products will be featured in this exhibit. Well-informed Squibb representatives will be on hand to welcome you and to furnish any information desired on the products displayed.

Frederick Stearns & Company
Detroit, Mich.

Booth 8

Physicians are cordially invited to visit this attractive convention booth to view and discuss outstanding contributions to medical science developed in their scientific laboratories.

Professional representatives will be pleased to supply all possible information on the use of such outstanding products as Neo-Synephrin Hydrochloride for intranasal use, Mucilose for bulk and lubrication, Ferrous Gluconate, Potassium Gluconate, Gastric Mucin, Susto, Trimax, Appella Apple Powder, Nebulator with Nebulin A, and our complete line of vitamin products.

United States Fidelity and Guaranty Company
Baltimore, Md.

Booth 12

Professional liability protection by U. S. F. & G. furnishes the broadest contract on the market. Obtain this needed protection from a large experienced organization with assets over 65 millions and representatives in every county in Pennsylvania. We have been specialists in this line since 1910; thousands of your fellow members enjoy the protection and peace of mind afforded by our superior contract. Our 10,000 representatives and 125 claim offices patronize the medical profession daily. A cordial welcome awaits you at our booth.

The Vale Chemical Company
Allentown, Pa.

Booth 37

Their product, Bismakaolin, will be featured this year.

Westinghouse Electric & Manufacturing Company
Long Island City, N. Y.

Booth 52

White Laboratories, Inc.
Newark, N. J.

Space 40

White's Cod Liver Oil Concentrate Liquid, Tablet, and Capsule and White's Thiamine Chloride Tablet—all Council-accepted—will be presented.

Well-trained, courteous representatives will be in attendance to discuss the practical advantages provided by Cod Liver Oil Concentrate as an economical and convenient measure of vitamin A and D prophylaxis and therapy. Pertinent information concerning our newer knowledge of the vitamins and vitamin deficiency states, together with literature descriptive of the clinical merit of the products of White Laboratories, will be offered for the registrant's consideration.

Williams & Wilkins Company
Baltimore, Md.

Booth 41

This exhibit should be visited by every physician because it provides the opportunity to examine personally some of the world's finest medical literature. The Williams & Wilkins Company of Baltimore now combined with the famous old New York house of Wm. Wood & Company will show not only such well-known standard American works as Cabot's *Physical Diagnosis,* May's *Eye,* Best & Taylor's *Physiological Basis of Medical Practice,* and Stedman's *Medical Dictionary,* but also many books by outstanding British authors, such as Watson-Jones' *Fractures,* the purchase of which helps to finance British war purchases. Be sure to visit this exhibit.

Winthrop Chemical Company, Inc.
New York City

Booth 60

A cordial invitation is extended to every member of The Medical Society of the State of Pennsylvania to visit this booth where representatives will gladly discuss the latest preparations made available by this firm. You will receive valuable booklets dealing with anesthetics, analgesics, antirachitics, antispasmodics, antisyphilitics, diagnostics, diuretics, hypnotics, sedatives, and vasodilators.

John Wyeth & Brother, Inc.
Philadelphia, Pa.

Booth 77

You are cordially invited to visit this exhibit where the following pharmaceutical specialties will be on display: Amphojel, Wyeth's Alumina Gel, for the control of hyperacidity and peptic ulcer; Wyeth's Hydrated Alumina Tablets, for the convenient control of hyperacidity; Kaomagma, Wyeth's magma of alumina and kaolin, for the control of diarrhea; B-Plex, Wyeth's Vitamin B Complex Elixir; A-B-M-C Ointment, the rubefacient counterirritant for the relief of arthritic pain; Bepron, Wyeth's beef liver with iron; and Bewon Elixir, Wyeth's palatable appetite stimulant.

The Zemmer Company
Pittsburgh, Pa.

Booth 54

We extend to the members of The Medical Society of the State of Pennsylvania and their guests a cordial invitation to visit this exhibit where we will have on display a number of our leading pharmaceutical products.

ABREAST OF MEDICAL PROGRESS

The editorial conferees are convinced from their preview of the contents of this issue of *The Pennsylvania Medical Journal* that its pages offer to the inquiring practitioner information and advice that will help to keep him abreast of many of the phases of successful practice even in these kaleidoscopic days marked by both therapeutic triumphs and patriotic responsibilities for the medical profession. Read the issue from cover to cover including our advertisers' pages and those of all contributors, reporters, and commentators, then forward to the *Journal* office your constructive criticisms and suggestions looking toward a *Journal* increasingly helpful to an increasing number of readers.

OFFICIAL TRANSACTIONS

Ninety-first Annual Session

CALL TO THE 1941 SESSION

The first meeting of the House of Delegates of The Medical Society of the State of Pennsylvania will be called to order in the Cardinal Room, Hotel William Penn, Pittsburgh, on Monday afternoon, Oct. 6, 1941, at 3 o'clock.

Included among general officers* and others to be elected at this annual session will be:

1. A *trustee and councilor for the Second District,* to serve for 5 years, to succeed Dr. Edgar S. Buyers, of Norristown; a *trustee and councilor for the Eighth District,* to serve for 5 years, to succeed Dr. Norbert D. Gannon, of Erie; and a *trustee and councilor for the Eleventh District,* to serve for 5 years, to succeed Dr. Laurrie D. Sargent, of Washington. Drs. Gannon and Sargent are completing their first term; Dr. Buyers will be ineligible for reelection, having served "two full consecutive terms."

2. *Six delegates to the American Medical Association* to serve for 1942 and 1943; *11 alternates-designate,* and *11 alternates-at-large.*

Notices relative to parliamentary requirements for consideration of amendments to the constitution and by-laws were published in this department of the May and July JOURNALS. Proposed amendments to the constitution and by-laws published in the June, July, and August JOURNALS are republished in this issue.

Proposed Amendment to Constitution

An amendment offered by the Blair County Medical Society to Article VIII, Section 1, of the Constitution of The Medical Society of the State of Pennsylvania, would delete the words "12 trustees who are also councilors," substituting the words *"and for each councilor district of the state, 1 trustee and 1 councilor."*

Proposed Amendments to By-Laws

The action of the Blair County Medical Society also contemplates the addition to Chapter 3 of Section 5, of the by-laws:

"At the councilor district meeting preceding the annual meeting of the State Society, whenever a trustee or a councilor for that councilor district is to be elected, the members of the councilor district present shall forward to the House of Delegates a nomination for trustee and for councilor."

An amendment offered by the Luzerne County Medical Society and received by the secretary on May 1, 1941, proposes that the second paragraph of Section 1, Article IV, of the constitution be deleted. The second paragraph reads as follows:

Physicians, otherwise qualified, who have taken their first citizenship papers, shall be eligible to membership. This membership is conditional upon the completion of citizenship within 6 years of the granting of first papers. Failure to comply with this provision will automatically terminate membership.

If the second paragraph is deleted, "Article IV—Membership" would then read as follows:

The membership of this society shall consist of citizens of the United States, members in good standing in the component county medical societies, and whose annual assessments in this society have been paid. This, however, shall not be construed to exclude from active membership any physician who may occupy a teaching position with any college or university within this state.

COMMITTEES OF THE 1941 HOUSE OF DELEGATES

COMMITTEE ON CREDENTIALS

J. Newton Hunsberger, Norristown, *Chairman.*
F. Raymond Adams, Watsontown.
Dorothy C. Blechschmidt, Philadelphia.

REFERENCE COMMITTEE ON REPORTS OF OFFICERS AND STANDING COMMITTEES

William W. Richardson, Mercer, *Chairman.*
John W. Barr, Johnstown.
Harold B. Gardner, Pittsburgh.

REFERENCE COMMITTEE ON SCIENTIFIC BUSINESS

J. Hart Toland, Philadelphia, *Chairman.*
John W. Shirer, Pittsburgh.
Roy E. Nicodemus, Danville.

REFERENCE COMMITTEE ON NEW BUSINESS

Howard K. Petry, Harrisburg, *Chairman.*
Robert J. Hunter, Philadelphia.
Francis J. Conahan, Bethlehem.

COMMITTEE ON PLACE OF MEETING

Walter Orthner, Huntingdon, *Chairman.*
Harry B. Thomas, York.
Heister V. Hower, Berwick.

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* Also successor to trustee and councilor of the Sixth District, Dr. Cloy G. Brumbaugh, Huntingdon, deceased Aug. 31; term expires 1944.

MEMBERS OF THE 1941 HOUSE OF DELEGATES*

The president of each component county society, or in his absence, the secretary, is a member of the House of Delegates.

Adams County

- Raymond F. Oyler, Biglerville, *President.*
  - Bruce N. Wolff, Gettysburg, *Secretary.*
- Eugene E. Elgin, East Berlin.
  - Roy W. Gifford, Gettysburg.
  - Walter S. Mountain, Gettysburg.

Allegheny County

- John P. Griffith, Pittsburgh, *President.*
  - George R. Harris, Pittsburgh, *Secretary.*
- John W. Fredette, Pittsburgh.
  - Samuel H. Adams, Pittsburgh.
  - Frank R. Bailey, Pittsburgh.
- Charles H. Henninger, Pittsburgh.
  - Stanley P. Balcerzak, Carnegie.
  - David A. Boggs, Wilkinsburg.
- Zoe Allison Johnston, Pittsburgh.
  - William F. Bozic, Pittsburgh.
  - Frank R. Braden, Jr., Coraopolis.
- Curtis C. Mechling, Pittsburgh.
  - Glenn H. Davison, Pittsburgh.
  - William M. Findley, Wilkinsburg.
- Hugh E. McGuire, Pittsburgh.
  - James C. Fleming, Pittsburgh.
  - Charles B. Forcey, Sewickley.
- Norman C. Ochsenhirt, Pittsburgh.
  - Bernhard A. Goldmann, Pittsburgh.
  - Benjamin L. Jones, Pittsburgh.
- Henry T. Price, Pittsburgh.
  - George Leibold, Pittsburgh.
  - Arthur K. Lewis, Homestead.
- John W. Shirer, Pittsburgh.
  - Andrew J. McAdams, Pittsburgh.
  - Earl V. McCormick, Munhall.
- Harold B. Gardner, Pittsburgh.
  - Thomas H. Manley, Jr., Pittsburgh.
  - Charles C. Moore, Pittsburgh.
- George R. Harris, Pittsburgh.
  - Harry O. Pollock, Turtle Creek.
  - Henry M. Ray, Pittsburgh.
- Frederick M. Jacob, Pittsburgh.
  - Charles K. Shanor, Sewickley.
  - William Shapera, Pittsburgh.
- David B. Ludwig, Pittsburgh.
  - Frederick W. Silsby, Tarentum.
  - Joseph B. Smith, Braddock.
- J. Homer McCready, Pittsburgh.
  - William J. K. Snyder, Avalon.
  - James W. Speelman, Pittsburgh.
- John F. McCullough, Pittsburgh.
  - Albert H. Winters, Pittsburgh.
- Chauncey L. Palmer, Pittsburgh.
  - Charles W. Wirts, Pittsburgh.

Armstrong County

- Benjamin J. Longwell, Seminole, *President.*
  - Jay B. F. Wyant, Kittanning, *Secretary.*
- Turney L. Kirkwood, Kittanning.
  - Charles W. Thompson, Ford City.
  - Robert H. Yoders, Templeton.

Beaver County

- Philip F. Martsolf, New Brighton, *President.*
  - J. Willard Smith, Beaver Falls, *Secretary.*
- Fred B. Wilson, Beaver.
  - Don B. Knapp, Beaver.
  - Loyal P. Atwell, Beaver Falls.
- Thomas W. McCreary, Monaca.
  - Henry C. Thel, Aliquippa.
  - Joseph A. Helfrich, Midland.

Bedford County

- Edward A. Shields, Bedford, *President.*
  - James R. Myers, Everett, *Secretary.*
- Dwight R. Sipes, Everett.
  - Victor Maffucci, Jr., Everett.
  - Lawrence D. Gallagher, Bedford.

Berks County

- Chester K. Kistler, Reading, *President.*
  - Clair G. Spangler, Reading, *Secretary.*
- Frank P. Lytle, Birdsboro.
  - Harry B. Corrigan, Reading.
  - Edward C. Edgerton, Reading.
- Charles E. Lerch, Wyomissing.
  - William F. Krick, Reading.
  - Nevin H. Rupp, Reading.

Blair County

- Ralston O. Gettemy, Altoona, *President.*
  - Harry D. Collett, Altoona, *Secretary.*
- Joseph D. Findley, Altoona.
  - Wilbert L. Grounds, Roaring Springs.
  - Carey C. Bradin, Tyrone.
- Roy W. Goshorn, Hollidaysburg.
  - Thomas J. Harrigan, Altoona.
  - Lewis P. Glover, Altoona.

Bradford County

- J. K. Williams Wood, Troy, *President.*
  - Stanley D. Conklin, Sayre, *Secretary.*
- Daniel L. Bevan, LeRoy.
  - George E. Richardson, Towanda.
  - C. Melvin Coon, Athens.

Bucks County

- Albert A. Gonzalez, Croydon, *President.*
  - J. Fred Wagner, Bristol, *Secretary.*
- Linford B. Roberts, Wycombe.
  - Willard H. Tice, Quakertown.
  - John T. Shaffer, Sellersville.

Butler County

- Max S. Nast, Butler, *President.*
  - Ralph M. Christie, Butler, *Secretary.*
- William J. Armstrong, Butler.
  - Robert S. Lucas, Butler.
  - John L. Grossman, Butler.

Cambria County

- William B. Templin, Johnstown, *President.*
  - Paul McCloskey, Johnstown, *Secretary.*
- John W. Barr, Johnstown.
  - Arthur Miltenberger, Johnstown.
  - William E. Grove, Johnstown.
- Daniel Ritter, Johnstown.
  - Joseph P. Replogle, Johnstown.
  - Joseph W. McHugh, Jr., Johnstown.

Carbon County

- Susan Tomchik, Lansford, *President.*
  - John L. Bond, Lehighton, *Secretary.*
- Clinton J. Kistler, Lehighton.
  - Stanley F. Druckenmiller, Lansford.
  - Jacob A. Trexler, Lehighton.

Centre County

- H. Thompson Dale, State College, *President.*
  - Leroy Locke, Bellefonte, *Secretary.*
- Peter H. Dale, State College.
  - Joseph A. Parrish, Bellefonte.
  - Paul M. Corman, Bellefonte.

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* The offset names are the alternates.

Chester County

Robert T. Devereux, West Chester, *President.*
Joseph Scattergood, Jr., West Chester, *Secretary.*
Joseph Scattergood, Jr., West Chester.
J. Ashbridge Perkins, Coatesville.
Horace F. Darlington, West Chester.
Kenneth S. Scott, Oakbourne.
William Limberger, West Chester.
Frank B. Robinson, Oxford.

Clarion County

Edward J. Keeling, Clarion, *President.*
James M. Hess, Fryburg, *Secretary.*
I. Dana Kahle, Knox.
Hilton A. Wick, New Bethlehem.
Donald W. Briceland, Rimersburg.

Clearfield County

Richard L. Williams, Houtzdale, *President.*
George R. Taylor, Philipsburg, *Secretary.*
Ward O. Wilson, Clearfield.
Andrew L. Benson, Philipsburg.

Clinton County

Robert F. Dickey, Lock Haven, *President.*
Henry G. Hager, Jr., Lock Haven, *Secretary.*
David W. Thomas, Lock Haven.
Edward Hoberman, Lock Haven.
Francis P. Dwyer, Renovo.

Columbia County

Howard R. Rarig, Berwick, *President.*
Claude W. Ashley, Bloomsburg, *Secretary.*
Heister V. Hower, Berwick.
William G. Berryhill, Orangeville.
Martin W. Freas, Berwick.

Crawford County

Charles E. Mullin, Cambridge Springs, *President.*
John C. Davis, Meadville, *Secretary.*
Herman H. Walker, Linesville.
John M. Kinnunen, Meadville.
John H. Bailey, Meadville.

Cumberland County

Charles M. Shaffer, Carlisle, *President.*
Richard R. Spahr, Mechanicsburg, *Secretary.*
Newton W. Hershner, Mechanicsburg.
W. Baird Stuart, Carlisle.
E. Blaine Hays, Carlisle.

Dauphin County

Howard K. Petry, Harrisburg, *President.*
A. Harvey Simmons, Harrisburg, *Secretary.*
George L. Laverty, Harrisburg.
Joseph W. Shaffer, Harrisburg.
Andrew J. Griest, Steelton.
Constantine P. Faller, Harrisburg.
Carl E. Ervin, Harrisburg.
Allen W. Cowley, Harrisburg.
Hewett C. Myers, Steelton.
Eurfryn Jones, Camp Hill.
Samuel L. Grossman, Harrisburg.

Delaware County

Franklin E. Chamberlin, Glenolden, *President.*
Augustus H. Clagett, Upper Darby, *Secretary.*
C. Irvin Stiteler, Chester.
Carl A. Staub, Darby.
Ferdinand W. Nyemetz, Chester.
John J. Sweeney, Highland Park.
Dennis T. Sullivan, Lansdowne.
Paul C. Crowther, Chester.
Walter A. Blair, Chester.
Henry L. Somers, Drexel Hill.
Drury Hinton, Drexel Hill.

Elk County

Charles N. Silman, St. Marys, *President.*
Fred E. Murdock, St. Marys, *Secretary.*
Leo Z. Hayes, Force.
Augustine C. Luhr, St. Marys.

Erie County

James A. M. Russell, Erie, *President.*
Norbert D. Gannon, Erie, *Secretary.*
James D. Stark, Erie.
J. Harrison Tate, Erie.
Percy P. Parsons, Erie.
Elmer G. Shelley, North East.
Kenneth S. Treiber, Erie.
Ray H. Luke, Erie.

Fayette County

Fred H. Harrison, Connellsville, *President.*
John N. Snyder, Masontown, *Secretary.*
Harry J. Bell, Dawson.
Ralph L. Cox, Star Junction.
Albert E. Coughenour, McClellandtown.
L. Dale Johnson, Connellsville.
Russell E. Sangston, Uniontown.
John B. Hibbs, Uniontown.

Franklin County

Frank J. Corbett, Fayetteville, *President.*
Ambrose W. Thrush, Chambersburg, *Secretary.*
Charles S. McConnell, Waynesboro.
Gordon E. Hanna, Waynesboro.
Joseph C. Hudson, Chambersburg.

Greene County

Vinton P. King, Waynesburg, *President.*
William W. Bartholomew, Waynesburg, *Secretary.*
Vincent P. Hart, Waynesburg.
William B. Clendenning, Waynesburg.
W. Sturgis Frankenburger, Carmichaels.

Huntingdon County

Frederic H. Steele, Huntingdon, *President.*
Donald C. Malcolm, Alexandria, *Secretary.*
Walter Orthner, Huntingdon.
John S. Herkness, Mount Union.

Indiana County

Frederick S. Shaulis, Indiana, *President.*
Joseph W. Gatti, Indiana, *Secretary.*
James G. Gemmell, McIntyre.
Frederick S. Shaulis, Indiana.
Joseph W. Gatti, Indiana.

Jefferson County

Sylvester S. Hamilton, Punxsutawney, *President.*
Francis J. Trunzo, Punxsutawney, *Secretary.*
C. Wearne Beals, DuBois.
Desiderius G. Mankovich, Punxsutawney.

Juniata County

Penrose H. Shelley, Port Royal, *President.*
Robert P. Banks, Mifflintown, *Secretary.*
Robert P. Banks, Mifflintown.
Frank G. Wagenseller, Richfield.
Isaac G. Headings, McAlisterville.

Lackawanna County

John E. Manley, Scranton, *President.*
John Lohmann, Scranton, *Secretary.*
William T. Davis, Scranton.
Martin T. O'Malley, Scranton.
James F. Reddington, Scranton.
Leonard G. Redding, Scranton.
Arthur E. Davis, Scranton.
Stanley W. Boland, Archbald.
John B. Jordan, Jr., Scranton.
Ralph J. Touch, Carbondale.
Leo P. Gibbons, Scranton.

Lancaster County

Harry C. Fulton, Lancaster, *President.*
Charles P. Stahr, Lancaster, *Secretary.*
Roy Deck, Lancaster.
Jacob E. Hostetter, Gap.
Walter K. Baer, Lancaster.
James Z. Appel, Lancaster.
Joseph Appleyard, Lancaster.
Harry S. Ziemer, Adamstown.
Harvey H. Seiple, Lancaster.
Clarence R. Farmer, Lancaster.
Robert D. Swab, Lancaster.

Lawrence County

H. Cyrus Harper, New Castle, *President.*
William A. Womer, New Castle, *Secretary.*
Mary J. Baker, New Castle.
John P. Prioletti, New Castle.
John O. Woods, New Castle.

Lebanon County

Edward L. Jones, Lebanon, *President.*
J. DeWitt Kerr, Lebanon, *Secretary.*
J. DeWitt Kerr, Lebanon.
Robert M. Wolff, Lebanon.
Herbert C. McClelland, Lebanon.

Lehigh County

Paul C. Shoemaker, Allentown, *President.*
J. Frederic Dreyer, Allentown, *Secretary.*
Robert L. Schaeffer, Allentown.
Clifford H. Trexler, Allentown.
Ralph H. Henry, Allentown.
Henry E. Guth, Orefield.
Charles H. Muschlitz, Slatington.
Frederick G. Klotz, Allentown.

Luzerne County

Joseph V. Connole, Wilkes-Barre, *President.*
Lachlan M. Cattanach, Wilkes-Barre, *Secretary.*
Charles L. Shafer, Kingston.
Almon C. Hazlett, Wyoming.
A. Burton Smith, Wyoming.
Joseph V. Fescina, Hazleton.
George W. Taggert, Hazleton.
Otto C. Reiche, Hazleton.
Albert R. Feinberg, Wilkes-Barre.
Herbert B. Gibby, Wilkes-Barre.
Edward M. Hill, Pittston.
Thomas R. Gagion, Pittston.
Louis W. Jones, Wilkes-Barre.
James B. Purcell, Wilkes-Barre.

Lycoming County

F. Raymond Adams, Watsontown, *President.*
Stuart B. Gibson, Williamsport, *Secretary.*
Walter S. Brenholtz, Williamsport.
LaRue M. Hoffman, Williamsport.
J. Gibson Logue, Williamsport.
George S. Klump, Williamsport.
Howard W. Current, Montoursville.
Reynold M. Grieco, Williamsport.

McKean County

Edward J. Phillips, Bradford, *President.*
James E. Woodhouse, Bradford, *Secretary.*
Francis DeCaria, Bradford.

Mercer County

Jonathan B. Perrine, Grove City, *President.*
James A. Biggins, Sharpsville, *Secretary.*
William W. Richardson, Mercer.
Patrick E. Biggins, Sharpsville.
Clarence C. Campman, West Middlesex.

Mifflin County

Marlin W. Helfrick, Belleville, *President.*
John R. W. Hunter, Jr., Lewistown, *Secretary.*
Charles J. Stambaugh, Reedsville.
A. Reid Leopold, Lewistown.
Marlin W. Helfrick, Belleville.

Monroe County

Moses J. Leitner, Bushkill, *President.*
Harold B. Flagler, Stroudsburg, *Secretary.*

Montgomery County

George R. Irwin, Bridgeport, *President.*
Walter J. Stein, Ardmore, *Secretary.*
J. Newton Hunsberger, Norristown.
Herbert B. Shearer, Worcester.
George L. Hoffman, Norristown.
Joseph E. Beideman, Norristown.
Albert R. Garner, Norristown.
Teofil Babacz, Phoenixville.
Elwood T. Quinn, Jenkintown.
H. Ernest Tompkins, Norristown.
Clifford H. Arnold, Ardmore.

Montour County

Vincent J. Cassone, Danville, *President.*
Sydney J. Hawley, Danville, *Secretary.*
Roy E. Nicodemus, Danville.
Peter O. Kwiterovich, Danville.
Wendell J. Stainsby, Danville.

Northampton County

Arthur B. Hamilton, Bethlehem, *President.*
Dudley P. Walker, Bethlehem, *Secretary.*
Francis J. Conahan, Bethlehem.
Donald K. Coleman, Bethlehem.
Herbert J. Schmoyer, Bethlehem.
W. Gilbert Tillman, Easton.
Paul Correll, Easton.
Victor S. Messinger, Easton.

Northumberland County

George M. Simmonds, Shamokin, *President.*
Mark K. Gass, Sunbury, *Secretary.*
Emily R. Shipman, Mt. Carmel.
Andrew B. Buczko, Mt. Carmel.
Joseph Guy Smith, Sunbury.

Perry County

William H. Gelnett, Millerstown, *President.*
Catherine Johnston, New Bloomfield, *Secretary.*
Amos G. Kunkle, Liverpool.
James R. Hamilton, New Bloomfield.

Philadelphia County

Louis H. Clerf, Philadelphia, *President.*
Henry G. Munson, Philadelphia, *Secretary.*

Elected in 1940 to serve in 1940 and 1941
Delegates

Walter S. Cornell, Philadelphia.
Frank W. Konzelmann, Philadelphia.
Frank W. Burge, Philadelphia.
J. Hart Toland, Philadelphia.
Joseph T. Cadden, Philadelphia.
Rufus S. Reeves, Philadelphia.
Dorothy C. Blechschmidt, Philadelphia.
Seth A. Brumm, Philadelphia.
Baldwin L. Keyes, Philadelphia.
J. Alexander Clarke, Philadelphia.
Leonard D. Frescoln, Philadelphia.
William Egbert Robertson, Philadelphia.

Alternates-at-Large

James A. Babbitt, Philadelphia.
Walter L. Cariss, Philadelphia.

George F. Enoch, Philadelphia.
Richard A. Kern, Philadelphia.
Andrew Callahan, Philadelphia.
Benjamin H. Shuster, Philadelphia.
Norman S. Rothschild, Philadelphia.
Leonard C. Hamblock, Philadelphia.
Harry E. Bacon, Philadelphia.
Markley C. Albright, Philadelphia.
Wilmer Krusen, Media.
John W. Klopp, Philadelphia.
Emily P. Bacon, Philadelphia.
Yetta E. Deitch, North Wales.
Willard H. Kinney, Philadelphia.
Charles A. W. Uhle, Philadelphia.
James J. Waygood, Philadelphia.
James W. McConnell, Philadelphia.
Craig W. Muckle, Philadelphia.
Thaddeus L. Montgomery, Philadelphia.

Elected in 1941 to serve in 1941 and 1942

Delegates

Edward W. Beach, Philadelphia.
Pascal F. Lucchesi, Philadelphia.
Joseph W. Post, Philadelphia.
Gilson Colby Engel, Philadelphia.
W. Burrill Odenatt, Philadelphia.
William G. Turnbull, Philadelphia.
Stanley P. Reimann, Philadelphia.
Eugene P. Pendergrass, Philadelphia.
George P. Muller, Philadelphia.
Charles L. Brown, Philadelphia.
Robert J. Hunter, Philadelphia.
William D. Stroud, Philadelphia.
Francis F. Borzell, Philadelphia.

Alternates-at-Large

Ralph E. Getelman, Philadelphia.
George E. Johnson, Philadelphia.
Chevalier L. Jackson, Philadelphia.
John W. Bransfield, Philadelphia.
C. Howard Moore, Philadelphia.
Russell S. Boles, Philadelphia.
Edwin B. Miller, Philadelphia.
Henry P. Webb, Philadelphia.
Douglas Macfarlan, Philadelphia.
Milton F. Percival, Philadelphia.
Bernard P. Widmann, Philadelphia.
Jesse O. Arnold, Philadelphia.
J. Montgomery Deaver, Philadelphia.
Ralph S. Bromer, Philadelphia.
Henry L. Bockus, Philadelphia.
William P. Belk, Wynnewood.
Russell C. Seipel, Philadelphia.
Randle C. Rosenberger, Philadelphia.
Ralph M. Tyson, Philadelphia.
John Davis Paul, Philadelphia.
Norman M. MacNeill, Philadelphia.
Charles C. Chapple, Philadelphia.
Joseph A. Daly, Philadelphia.

POTTER COUNTY

Bernard S. Bretherick, Roulette, *President.*
  J. Irving Bentley, Coudersport, *Secretary.*
Joseph W. Harshberger, Coudersport.
  Bernard S. Bretherick, Roulette.
  Herman C. Mosch, Coudersport.

SCHUYLKILL COUNTY

Peter B. Mulligan, Ashland, *President.*
  Charles V. Hogan, Pottsville, *Secretary.*
T. Lamar Williams, Mt. Carmel.
  Albanus S. Ryland, Pottsville.
  Anthony M. Miller, St. Clair.
Christian Gruhler, Shenandoah.
  Wilton R. Glenney, Pottsville.
  William A. Jacques, Ashland.

SOMERSET COUNTY

Bradley H. Hoke, Jr., Salisbury, *President.*
  Bradley H. Hoke, Meyersdale, *Secretary.*
Charles I. Shaffer, Somerset.
  Charles B. Korns, Sipesville.
  Wilbur W. Westfall, Somerset.

SUSQUEHANNA COUNTY

James J. Grace, Montrose, *President.*
  Abram E. Snyder, New Milford, *Secretary.*
Park M. Horton, New Milford.

TIOGA COUNTY

Charles W. Sheldon, Wellsboro, *President.*
  Robert D. Leonard, Tioga, *Secretary.*
Lloyd G. Cole, Blossburg.
  Harry Williams, Elkland.
  Harry B. Knapp, Wellsboro.

VENANGO COUNTY

Cecil H. Hodgkinson, Oil City, *President.*
  Norman K. Beals, Franklin, *Secretary.*
Ford M. Summerville, Oil City.
  James R. Sharp, Oil City.
  Paul R. Cunningham, Franklin.

WARREN COUNTY

Tom K. Larson, Warren, *President.*
  Hilding A. Bengs, Warren, *Secretary.*
Quay A. McCune, Warren.
  William M. Cashman, Warren.
  Hilding A. Bengs, Warren.

WASHINGTON COUNTY

George L. McKee, Burgettstown, *President.*
  Albert E. Thompson, Washington, *Secretary.*
Milton F. Manning, Beallsville.
  David M. Dunbar, Buffalo.
  Arthur E. Morgan, Washington.
James H. Corwin, Washington.
  James D. Corwin, Washington.
  Wilbur J. Hawkins, Sr., Millsboro.

WAYNE-PIKE COUNTY

Hobart N. Owens, Hawley, *President.*
  Howard R. Patton, Damascus, *Secretary.*
Hobart N. Owens, Hawley.
  Frederick L. Weniger, Waymart.
  Robert C. Canivan, Honesdale.

WESTMORELAND COUNTY

Paul G. McKelvey, Greensburg, *President.*
  Richard S. Cole, Greensburg, *Secretary.*
Anthony L. Cervino, Jeannette.
  Elmer Highberger, Greensburg.
  D. Allison Walker, Torrance.
Gervase F. Nealon, Latrobe.
  John I. Wiseman, Torrance.
  John F. Blair, Derry.

WYOMING COUNTY

Van C. Decker, Nicholson, *President.*
  Arthur B. Davenport, Tunkhannock, *Secretary.*
Lorne T. MacDougall, Tunkhannock.

YORK COUNTY

Herman A. Gailey, York, *President.*
  H. Malcolm Read, York, *Secretary.*
Harry B. Thomas, York.
  Raymond M. Lauer, York.
  John D. Yeagley, York.
Milton H. Cohen, York.
  Kenneth G. O'Toole, York.
  Eli Eichelberger, York.

REPORTS OF OFFICERS

REPORT OF THE SECRETARY

To the President and House of Delegates:

Membership

The following is the component society distribution of active membership for 1940 and 1941, respectively: Adams, 32, 30; Allegheny, 1475, 1503; Armstrong, 48, 50; Beaver, 104, 107; Bedford, 14, 14; Berks, 198, 203; Blair, 109, 112; Bradford, 41, 44; Bucks, 78, 77; Butler, 67, 64; Cambria, 181, 175; Carbon, 35, 35; Centre, 31, 34; Chester, 105, 106; Clarion, 25, 24; Clearfield, 60, 53; Clinton, 20, 17; Columbia, 40, 43; Crawford, 61, 62; Cumberland, 38, 39; Dauphin, 227, 229; Delaware, 238, 251; Elk, 30, 29; Erie, 167, 168; Fayette, 122, 121; Franklin, 68, 71; Greene, 28, 28; Huntingdon, 27, 28; Indiana, 53, 57; Jefferson, 46, 47; Juniata, 7, 8; Lackawanna, 256, 266; Lancaster, 207, 215; Lawrence, 77, 76; Lebanon, 44, 51; Lehigh, 171, 178; Luzerne, 338, 339; Lycoming, 118, 118; McKean, 47, 50; Mercer, 90, 90; Mifflin, 34, 33; Monroe, 34, 33; Montgomery, 241, 263; Montour, 36, 34; Northampton, 151, 157; Northumberland, 77, 79; Perry, 16, 17; Philadelphia, 2349, 2482; Potter, 12, 16; Schuylkill, 174, 160; Somerset, 40, 37; Susquehanna, 17, 18; Tioga, 23, 25; Venango, 53, 56; Warren, 52, 51; Washington, 138, 144; Wayne-Pike, 22, 23; Westmoreland, 176, 182; Wyoming, 15, 13; York, 163, 158.

A study of the foregoing figures will show that 37 component societies have increased their membership; 18 have sustained a loss; and in 5 there has been no change.

On Aug. 11, 1941, a total of 9013 members of our society had paid their 1941 State Society dues in comparison with 8994 on the same date last year, a net gain of 19 members, losses totaling 218 members, divided as follows: By death, 163 members; by removal, 30; and by resignation, 25. Our society now has 253 affiliate members, formerly active members.

Two hundred and twenty-four members called to active military service previous to Apr. 1, 1941, were excused from payment of 1941 county and state medical society dues. Of this total the 1941 state society dues of 22 members were paid by the following component societies: Beaver, Bucks, Columbia, Jefferson, Montgomery, Northampton, and Venango. Thirty-eight members paid only one-half the annual state society dues, having been called to active military service subsequent to April. Thus the State Society's income from members' dues was diminished approximately $2000, which, with expenditures by the Pennsylvania Medical Preparedness Committee, brings the total cost to the society to approximately $3500.

Medical Defense

It is gratifying to report that only 7 applications for medical defense have been received and approved during the past year:

No. 330. Summons served Aug. 5, 1940. Claims injection for neuritis and arthritis in left shoulder caused gluteal abscess. No commercial insurance.

No. 331. Summons served Aug. 26, 1940. Claims burn resulted from bivalve speculum during insertion of radium in cervix.

No. 332. Summons served Oct. 16, 1940. Trespass claimed by widow of an industrial employee who died suddenly at work. Defendant physician, with consent of coroner's physician who had completed autopsy but without permission of the family, abstracted from heart previously removed from body a section for pathologic examination. No commercial insurance.

No. 333. Claims saddle nose as result of operation for correction of nasal deformity. Application dated May 22, 1941.

No. 334. Summons served Apr. 14, 1941. Acute prostatitis. No commercial insurance.

No. 335. Summons served Apr. 14, 1941. Claims injury to parietal pleura during modified radical amputation of right breast caused pneumothorax.

No. 336. Summons served June 6, 1941. Claims operation for bleeding and prolapsing internal hemorrhoids not successful and rehospitalization necessary.

One case was closed during the past 12 months:

No. 302. Acute cellulitis of left arm, resulting in deformity and disability. Jury rendered verdict in favor of defendant. Plaintiff's attorney filed motion for new trial, which was dismissed. Case ended unless plaintiff takes appeal to Supreme Court.

Total expenditures by the State Society during the past year for attorneys' fees in the defense of members against suits for alleged malpractice amounted to $575, making the average yearly expenditure for the past 7 years $950.

Continuing brief comments on the topic of abandoning this phase only of medical defense service (see page 1179, June, 1941, Pennsylvania Medical Journal), it should be remembered that the payment of attorneys' fees, while a tangible result, is the least of the values emanating from this State Society service now in its thirty-fifth year.

As a result of our society's 35 years' judicious service to members, commercial indemnity insurance companies that refuse to sell their defense service in contiguous states sell their service to our members at a rate one-third less than physicians in other states are required to pay.

Financial Statement

GENERAL FUND

Balance on hand, Sept. 1, 1940			$20,849.62
Receipts			
Allotment from dues (211 for 1940; 9013 for 1941)		$81,645.55	
Journal		15,590.54	
Annual session		12,190.00	
Rent, 230 State St.		200.00	
Refund postage on letter-bulletins		70.62	
Library		63.50	
Sale of roster, health exam. blanks		66.00	
Final dividend, closed Harrisburg bank		16.00	
Miscellaneous		18.75	
			$109,860.96
Transfer from Med. Def. Fund for vouchers Nos. 185, 334, 423, 428		$18,161.88	
Transfer from Med. Benev. Fund for vouchers Nos. 183, 285, 443, 600, 603; 423		20,208.41	
Transfer from Endowment Fund for vouchers Nos. 203, 218, 276, 333; 77, 141, 178, 213, 262, 313, 370, 412, 469, 536, 569, 590; and proportion of		6,500.00	
library upkeep and utilities		1,905.50	
			$46,775.79
			$177,486.37
Disbursements			
Journal and official transactions (inc. editor's salary and 65% salaries Harrisburg office assistants)		$37,719.89	
Committees:			
Public Health Legis.	$14,164.40		
Public Relations	5,912.36		

Appendicitis Mortality	$3,087.50		
Library	1,729.00		
Child Health	1,346.05		
Medical Preparedness	1,068.55		
Diabetes	764.22		
Pneumonia Control	384.06		
Medical Economics	361.03		
Graduate Education	165.55		
Industrial Health	158.39		
Nutrition	87.87		
Maternal Welfare	55.20		
Miscellaneous	204.31		
		$29,488.49	
Annual session (inc. erection of booths, reporters, sci. work com. exp., 35% salaries Harrisburg office assistants)		13,289.53	
Secretary's office, salaries of secretary and office assistants to secretary and to chairmen coms. pub. hlth. legis., pub. rel., pneu., med. economics, preparedness, sci. work, councilor dist. meets., etc.		10,155.00	
Travel exp. officers inc. trustees		2,312.54	
230 State St., taxes, repairs, upkeep		2,038.25	
Rent—offices, secretary, coms. pub. hlth. legis., pub. rel., and preparedness		1,445.28	
Reimbursement petty cash funds: Harrisburg, $780.19; Pittsburgh, $491.96		1,272.15	
Postage: sec'y's office, coms. pub. hlth. legis., pub. rel., pneu., preparedness, med. economics, counc. dist. meets., etc.		1,250.20	
Social Security Tax Reserve Fund (additional)		1,000.00	
Stationery and supplies		896.89	
Councilor district meetings		834.17	
Printing 1940 Roster and trip rcts.		781.09	
Honoraria: treasurer, $150; legal counselor, $300		450.00	
Annual audit of accounts		250.00	
Furniture and fixtures		221.92	
Premiums: officers' bonds; insurance		66.49	
Floral memorials		65.00	
Dues: Penna. and Harrisburg Ch. Commerce		50.00	
Refund, 1941 dues a/c military service		25.00	
Peoples Pgh. Trust Co., service chg.		22.34	
Miscellaneous		4.32	
Transferred from Medical Defense Fund		18,161.88	
Transferred from Medical Benev. Fund		20,208.41	
Transferred from Endowment Fund		6,500.00	
			$148,508.84
Balance on hand, Sept. 1, 1941			$28,977.53

SOCIAL SECURITY TAX RESERVE FUND

Balance on hand, Sept. 1, 1940	$1,000.00	
Receipts—by voucher No. 378	1,000.00	
		$2,000.00
Disbursements—none		....
Balance on hand, Sept. 1, 1941		$2,000.00

MEDICAL DEFENSE FUND

Balance on hand, Sept 1, 1940		$39,812.53

Receipts

Allotment from dues	$917.45	
Interest on investments	633.56	
Interest on deposits	676.21	
Proceeds from sale of bonds—		
City of New York	3,393.75	
Illinois Central R. R.	207.25	
Lehigh Valley R. R. Co.	1,127.96	
		6,956.18
		$46,768.71

Disbursements

Transferred to General Fund—		
In payment of vouchers Nos. 185, 334	$575.00	
In payment of vouchers No. 428, and $7400 of No. 423	17,586.88	
		$18,161.88
Balance on hand, Sept 1, 1941		$28,606.83

MEDICAL BENEVOLENCE FUND

Balance on hand, Sept. 1, 1940			$123,286.02

Receipts

Allotment from dues	$9,174.60		
Interest on investments	1,808.58		
Interest on deposits	2,158.03		
Proceeds from sale of bonds—			
Western Union Tel. Co.		$4,047.41	
Balt. & Ohio R. R. Co.		2,247.45	
Northern Pac. R. R. Co. (Prior Lien)		797.76	
Illinois Central R. R. Co.		1,450.71	
City of New York		3,393.75	
Carolina, Clinchfield & Ohio Ry. (called Dec. 15, 1940)		5,300.00	
Contributions:			
West Branch Med. Assn.	$19.85		
Woman's auxiliaries	6,221.95		
		6,241.80	
			$36,619.99
			$159,906.01

Contributions from Woman's Auxiliaries

State Auxiliary	$400.00	Jefferson	$5.00
Allegheny	1,324.95	Lackawanna	410.00
Armstrong	67.00	Lancaster	50.00
Beaver	60.00	Lawrence	100.00
Berks	200.00	Lebanon	100.00
Blair	75.00	Lehigh	200.00
Bradford	18.00	Luzerne	100.00
Bucks	50.00	Lycoming	250.00
Butler	25.00	Mercer	75.00
Cambria	50.00	Mifflin	60.00
Centre	50.00	Montgomery	325.00
Chester	100.00	Montour - Columbia	25.00
Clearfield	100.00	Northampton	75.00
Clinton	50.00	Northumberland	10.00
Crawford	10.00	Philadelphia	100.00
Dauphin	150.00	Potter	10.00
Delaware	125.00	Schuylkill	130.00
Del. Co. Med. Club	25.00	Tioga	50.00
Erie	200.00	Venango	100.00
Fayette	100.00	Warren	32.00
Franklin	75.00	Washington	100.00
Greene	50.00	Westmoreland	400.00
Huntingdon	35.00	York	175.00

Disbursements

Transferred to General Fund—		
In payment of vouchers Nos. 183, 285, 443, 600, 603	$10,208.41	
In payment of voucher No. 423	10,000.00	
		$20,208.41
Balance on hand, Sept. 1, 1941		$139,697.60

ENDOWMENT FUND

Balance on hand, Sept. 1, 1940		$23,357.06

Receipts

Interest on investments	$674.52	
Interest on deposits	298.95	
Proceeds from sale of bonds—Gulf, Mobile & O. R. R.	1,572.09	
		$2,545.56
		$25,902.62

Disbursements

Transferred to General Fund—		
In payment of vouchers Nos. 218, 276, 333	$6,500.00	
In payment of vouchers Nos, 77, 141, 178, 213, 262, 313, 370, 412, 469, 536, 569, 590, 203, also library upkeep and proportion of utilities	1,905.50	
Transferred to Medical Service Assn. of Pennsylvania Reserve Fund	3,119.12	
		$11,524.62
Balance on hand, Sept. 1, 1941		$14,378.00

DISBURSEMENTS 1940-1941

Voucher No.		
1.	D. E. Knoepfel, commission adv. Sept. Jour., vouchers Nos. 1, 2, 3, 95, 446	$324.00
4.	Evangelical Press, printing 1940 roster; letters, preprints to membership; appendicitis survey bklts.; 1940 handbook; diabetes reprints; binding 31 vol. Jour.; pneumonia preprints, etc., vouchers Nos. 4, 90, 220, 444, 514	1,870.42
5.	National Broadcasting Co., entertainer, installation meeting	150.00
6.	Arthur Murray, Inc., entertainers, install'n meet.	125.00
7.	Philadelphia Orchestra, services, install'n meet.	160.00
8.	American Academy of Music, balance rental, install'n meet.	453.56
9.	Geo. F. Seitz, printing, annual session, vouchers Nos. 9, 66	50.75
10.	Grant L. Bell, auditing accounts	250.00
11.	L. H. Perry, reimburse petty cash (inc. utilities and janitor serv., pstg., supplies, etc., at 230 State St.; incidental exp. library and com. p. h. l., vouchers Nos. 11, 54, 107, 150, 197, 247, 294, 343, 397, 445, 519, 596	2,955.40

Voucher No.		
12.	Geo. M. Young, entertainment at golf dinner	$35.00
13.	Postmaster, stamps, postals, stamped envelopes, vouchers Nos. 13, 94, 167, 226, 281, 331, 344, 394, 418, 458, 527, 559	1,163.20
14.	Clay Ray Murray, trav. exp., guest speaker	15.00
15.	A. R. Ishiguro, kodachrome diabetes film	222.67
16.	Appel & Weber, gavel, retiring president	20.00
17.	H. Ivan Brown, trav. exp., sec. labty. med., vouchers Nos. 17, 154	22.71
18.	R. C. Bader, scroll, diabetes exhibit	23.00
19.	Fdk. H. Leavitt, reimburse exp. golf dinner	28.00
20.	Chas. L. Brown, trav. exp., com. sci. work and grad. edu., vouchers Nos. 20, 286, 498	47.15
21.	Chas. H. Henninger, trav. exp., preparedness com., vouchers Nos. 21, 351, 420	47.95
22.	Geo. J. Kastlin, trav. exp., com. pneu. and sci. work, vouchers Nos. 22, 499	129.85
23.	D. T. Diller, staty. and printing, vouchers Nos. 23, 322, 386, 520	198.69
24.	B. C. Blaine, trav. exp. and exhibit, diabetes com., vouchers Nos. 24, 129, 505	102.77
25.	A. B. Dick, mimeo. supplies, vouchers Nos. 25, 93, 160, 201, 251, 287, 348, 401, 457, 521, 558	259.40
26.	Horner, Doyle, Wright, printing, stationery, postals, postage, supplies, vouchers Nos. 26, 101, 156, 202, 252, 320, 360, 402, 476, 524, 575	1,759.68
27.	Joe Fresetto Orchestra, at president's reception	175.00
28.	F. C. Hammond, editor's exp., vouchers Nos. 28, 395	382.75
29.	Merion Cricket Club, delegates and other dinner guests	280.00
30.	Orchid Shop, decorations, install'n meeting	75.00
31.	Walter F. Donaldson, secretary, for cash payment, assts. at registration desk	162.00
32.	P. N. Garrett Agcy, premium mgr's bond and fire ins., 230 State St., vouchers Nos. 32, 296	40.87
33.	Ewing Cain, rental Hbg. office, child hlth. com., vouchers Nos. 33, 103, 147, 195, 241, 283, 339, 379, 456, 493, 554	430.50
34.	A. G. Trimble, buttons and badges an. sess'n	210.00
35.	Jenkins Arcade Co., rent, vouchers Nos. 35, 105, 149, 196, 242, 284, 338, 383, 455, 495, 551, 578	1,445.28
36.	Kathleen Cornell, asst. pneu. exhibit	20.00
37.	E. V. McNett, charts, pneu, exhibit	136.00
38.	E. F. Traub, trav. exp., guest speaker	6.50
39.	F. W. White, trav. exp., guest speaker	10.35
40.	F. T. O'Donnell, exp. Hbg. and W. Barre offices, child hlth. com., vouchers Nos. 40, 109, 158, 222, 267, 290, 345, 422, 454, 544	607.11
41.	J. J. Gillespie Co., framing testmnl. ctfs., vouchers Nos. 41, 168, 398, 576	41.60
42.	American Surety Co., premium, officers' bonds	18.75
43.	Walter F. Donaldson, secy., reimburse petty cash acct. (inc. stenog. serv. preparedness com., pstg. and supplies misc. coms.), vouchers Nos. 43, 193, 295, 330, 400, 479, 526, 597	1,099.77
44.	American Med. Assn., reprints, vouchers Nos. 44, 161	11.50
45.	G. Herzberg, drayage, annual sess'n	12.00
46.	L. H. Perry, travel exp., self and Hbg. office assts. at ann'l sess'n and acct. 1941 session, vouchers Nos. 46, 91, 165, 496	214.90
47.	A. H. Stewart, Jr., travel exp., 1940 and '41 sessions, vouchers Nos. 47, 83, 336, 449	139.00
48.	PCW Film Service, pub. rel. com. exhibit	10.64
49.	Walter F. Donaldson, sec'y's travel exp. inc. exp. office assts. and R. Jansen at ann'l sess'n and latter at Phila. Institute, vouchers Nos. 49, 270, 335, 375, 421, 491, 497	754.78
50.	J. P. Harley, trustee's travel exp., vouchers Nos. 50, 357, 440, 448, 553	133.25
51.	Philadelphia Co. Med. Socy., reimbursement acct. annual sess'n exp., vouchers Nos. 51, 99	119.52
52.	R. B. Cattell, travel exp., guest speaker	37.85
53.	Davis Displays, show cards, repairs and storage p. r. com. elec. map, vouchers Nos. 53, 65, 522	54.86
55.	Elvanian & Mayers, trimming and signs, pneu. and diab. exhibit booths, vouchers Nos. 55, 114, 224	213.50
56.	Chas. F. Wood, display cards, per. hlth. exam. exhibit	33.00
57.	M. A. Blankenhorn, travel exp., guest speaker	61.00
58.	Walter F. Donaldson, secy., for deposit in petty cash for pmt. winners p. rel. com. prize essay contest	120.00
59.	B. S. Veeder, travel exp., guest speaker	81.30
60.	Lawson Wilkins, travel exp., guest speaker	11.60
61.	C. L. Palmer, chr. p. h. legis. com., 12 mos. salary, 5 mos. per diem	6,400.00
	Travel exp., $1,880.15; telephone, telegrams, $179.22; collateral exp., $1,250.00 (vouchers Nos. 61, 63, 106, 134, 157, 171, 198, 207, 246, 255, 289, 340, 362, 396, 405, 462, 480, 523, 529, 562, 582, 602)	3,309.37
62.	J. B. McMurray, travel exp., com. sci. work, vouchers Nos. 62, 432	$72.75
64.	F. C. Irving, travel exp., guest speaker	30.20
67.	Eastman Kodak Stores, kodachrome duplicate diabetes film, 1 Ampro Vab Speaker, spc. microphone, etc., vouchers Nos. 67, 92, 199, 250, 299, 376, 399, 525, 577	604.77
68.	Walter F. Donaldson, secretary and editor, salary, vouchers Nos. 68, 130, 169, 204, 253, 302, 361, 404, 461, 528, 561, 581	6,975.00
69.	F. C. Hammond, editor-emeritus, salary, vouchers Nos. 69, 131, 170, 205, 254, 305, 363	1,566.64
70.	Edw. L. Bortz, chr., pneu. com. exp.	36.59
71.	L. H. Perry, managing editor, salary, vouchers Nos. 71, 135, 172, 206, 256, 307, 364, 406, 463, 530, 563, 583	4,800.00
72.	Alex. H. Stewart, Jr., ed. asst., salary vouchers Nos. 72, 136, 173, 208, 258, 308, 365, 407, 464, 531, 564, 585	2,280.00
73.	Miriam Egolf, salary, vouchers Nos. 73, 138, 175, 210, 259, 310, 367, 409, 466, 533, 566, 587	1,285.00
74.	Hyacinth Willners, ed. asst., salary, vouchers Nos. 74, 137, 174, 209, 257, 309, 366, 408, 465, 532, 565, 586	1,800.00
75.	Iris Otterfelt, salary, vouchers Nos. 75, 139, 176, 211, 260, 311, 368, 410, 467, 534, 567, 588	1,165.00
76.	Mildred Smeltzer, salary, vouchers Nos. 76, 140, 177, 212, 261, 312, 369, 411, 468, 535, 568, 589	1,105.00
77.	Mary E. Taylor, librarian, salary, vouchers Nos. 77, 141, 178, 213, 262, 313, 370, 412, 469, 536, 569, 590	1,405.00
78.	Ida L. Little, salary, vouchers Nos. 78, 142, 179, 214, 263, 314, 371, 415, 473, 539, 573, 594	2,700.00
79.	Fern Leu, salary, vouchers Nos. 79, 143, 180, 215, 264, 315, 372, 416, 472, 540, 572, 593	1,380.00
80.	Thelma Doege, salary, vouchers Nos. 80, 144, 181, 216, 265, 316, 373, 414, 471, 538, 571, 592	1,260.00
81.	Roy Jansen, salary, vouchers Nos. 81, 145, 182, 217, 266, 317, 374, 413, 470, 537, 570, 591	3,600.00
82.	Nu-Hesive Co., refund exhibit space canceled	67.50
84.	Ruth Price, reporting Derm. and Urol. Rd. Tables	154.15
85.	L. K. Ferguson, trav. exp., com. sci. work	13.04
86.	F. F. Borzell, president, travel exp., vouchers Nos. 86, 244, 382, 549	698.50
87.	H. B. Magath, travel exp., guest speaker	84.20
88.	Phila. Transportation Co., spc. coach serv., annual sess'n	33.00
89.	Mary E. Reik, reporting surg. sec. and rd. tables	195.35
90.	Evangelical Press, issuing JOURNAL (Aug., Sept. estimated), vouchers Nos. 90, 111, 159, 220, 248, 319, 341, 381, 444, 514, 556, 598, 599	26,170.30
96.	Master Reporting Co., reporting at annual session	650.69
97.	Progressive Press, printing 1941 trip. rect. books	245.00
98.	H. K. Gray, travel exp., guest speaker	79.00
100.	Harnies & Salsbury, prem. work. comp. ins. and mov. pict. mach., vouchers Nos. 100, 419, 513	42.74
102.	J. O. Bower, chr., appendicitis com. exp., vouchers Nos. 102, 128, 148, 194, 240, 282, 337, 385, 459, 504, 560, 580	3,000.00
104.	Bellevue-Stratford Hotel, tech. and sci. ex. booths, annual session, refreshments at president's reception, and inc. exp. ann. sess'n, vouchers Nos. 104, 223	2,592.57
108.	J. D. Sturgeon, travel exp., sci. work com., vouchers Nos. 108, 436	57.99
110.	Williams, Brown & Earle, lanterns and operators	325.20
112.	Royal Typewriter Co., rental typewriters and new typrtr., Hbg. off., vouchers Nos. 112, 124	123.00
113.	American Heart Assn., rental film, public exhibit	6.00
115.	David W. Kramer, exp. diab. exhibit	16.80
116.	Wm. Garrett, lantern operator	15.00
117.	J. C. Muir, lantern operator	24.00
118.	L. Burt, signs, diabetes ex.	27.50
119.	Atlantic Photo. Serv., photog. diab. ex.	10.50
120.	Press Photo Bureau, 12 signs, 2 photos diab. ex.	35.00
121.	Wilbert Flower Shop, floral memorials, Drs. Morgan and Hammond, vouchers Nos. 121, 380	35.00
122.	W. N. Long, exp. and per diem, member com. p. h. l., vouchers Nos. 122, 225, 403	30.75
123.	Anderson Press, imprint. health ex. blanks, vouchers Nos. 123, 163	93.83
125.	Buennings, floral mem., Dr. Estes	15.00
126.	Jas. S. Taylor, chr., maternal welf. com.	16.90
127.	Sally Coates, reporting com. diab.	60.00
132.	J. B. Lowman, treasurer, salary, vouchers Nos. 132, 303, 460, 584	150.00

Voucher No.		
133.	C. E. Kenworthey and P. H. Strubing, legal counsel, salary, vouchers Nos. 133, 304, 474, 595	$300.00
146.	Jas. H. Thompson, Esq., retaining fee, com. p. h. l., vouchers Nos. 146, 442	500.00
151.	Gen. Patchus, stenog., sci. work com.	58.40
152.	J. H. Clark, co-chr. sci. exhibit, exp.	19.50
153.	F. D. Weidman, co-chr. sci. exhibit, exp.	9.67
155.	A. A. Wassermann, Esq., services for com. p. h. l., vouchers Nos. 155, 332, 601	1,850.00
162.	Office Serv. Co., mimeographing	6.12
164.	Peoples-Pgh. Trust Co., service chg., vouchers Nos. 164, 221, 548	26.66
166.	Lycoming Co. Med. Socy., deficit, graduate seminar	38.00
183.	E. R. Samuel, Tr., med. benev. fund, vouchers Nos. 183, 285, 443, 600, 603	10,208.41
184.	Robt. L. Anderson, trustee's travel exp., vouchers Nos. 184, 243, 269, 350, 387	174.30
185.	Evans, Bayard & Frick, attys.' services, med. def. case No. 302	500.00
186.	N. D. Gannon, trustee's travel exp., vouchers Nos. 186, 273, 359, 489, 547	146.20
187.	H. F. Hunt, exp. sec. labty. med., vouchers Nos. 187, 435,	20.41
188.	Erpi Classroom Films, film and print	45.00
189.	F. C. Lechner, travel exp., com. indus. health	11.00
190.	Charles-Francis Long, exp. chr. com. indus. hlth., vouchers Nos. 190, 245, 424	105.20
191.	D. E. Hemington, exp. com. indus. hlth., vouchers Nos. 191, 453	51.00
192.	Jas. A. Hughes, exp. com. indus. hlth.	8.00
200.	Geo. C. Yeager, trustee's travel exp., vouchers Nos. 200, 452	113.48
203.	Office Equip. Co., units & panels, library	71.64
218.	Robt. L. Anderson, treas., Md. Serv. Assn. Pa., payment bal. of loan from End. Fund, vouchers Nos. 218, 276, 333	6,500.00
219.	G. C. Smith, travel exp., guest speaker	28.80
227.	R. J. Sagerson, travel exp. and per diem, com. p. h. l., vouchers Nos. 227, 389	58.90
228.	F. J. Conahan, travel exp. and per diem, com. p. h. l., vouchers Nos. 228, 392	52.00
229.	W. S. Brenholtz, travel exp. and per diem, com. p. h. l., vouchers Nos. 229, 393	41.85
230.	Thos. R. Gagion, travel exp. and per diem, com. p. h. l., vouchers Nos. 230, 390	47.25
231.	K. S. Scott, travel exp., chr. com. med. ec., vouchers Nos. 231, 327, 478, 490	59.74
232.	C. C. Rinard, travel exp., healing arts adv. com., vouchers Nos. 232, 293	33.60
233.	K. M. Hoffman, travel exp., healing arts adv. and grad. edu. com., vouchers Nos. 233, 271	54.10
234.	H. A. Johnson, travel exp., healing arts adv. com.	29.00
235.	H. H. Walker, travel exp., healing arts adv. com.	20.65
236.	M. T. O'Malley, travel exp., healing arts adv. com.	15.60
237.	Robt. Devereaux, travel exp., healing arts adv. com.	6.10
238.	T. K. Larson, travel exp., healing arts adv. com.	30.00
239.	G. C. Hohman, travel exp., healing arts adv. com.	7.25
249.	Penna. State Chamber Commerce, dues	25.00
268.	B. A. Goldman, travel exp., com. sci. work, vouchers Nos. 268, 488	40.00
272.	Wm. A. Bradshaw, travel exp., com. grad. edu.	20.15
274.	L. E. Wurster, travel exp., com. sci. work	4.50
275.	A. B. Thomas, travel exp., com. sci. work, vouchers Nos. 275, 438	39.20
277.	T. P. Tredway, travel exp., com. grad. edu.	36.30
278.	L. J. Hampton, travel exp., com. grad. edu.	12.40
279.	M. K. Gass, travel exp., com. grad. edu.	6.00
280.	L. G. Runk, travel exp., com. grad. edu.	14.60
288.	J. J. Brennan, trustee's travel exp., vouchers Nos. 288, 355, 450	100.00
291.	Collins Press, index cards, report sheets, etc., com. child health	128.91
292.	A. R. Feinberg, travel exp., healing arts adv. com.	16.50
297.	M. H. Taylor, fire ins. prem.	71.74
298.	Kaufmann's, carpet	69.00
300.	Display Studios, sign p. r. com. at Planetarium	16.00
301.	Penna. Tb. Socy., film "Let My People Live"	14.00
318.	A. R. Garner, travel exp., healing arts adv. com.	7.10
321.	Time, inc., print film "Heart Disease"	10.00
323.	Pub Rel. Com. N. Y. State Med. Socy., reprints	16.00
324.	J. H. Corwin, travel exp., com. med. ec., vouchers Nos. 324, 441, 487	67.25
325.	L. M. Hoffman, travel exp., com. med. ec.	9.50
326.	Hilding A. Bengs, travel exp., com. med. ec., vouchers Nos. 326, 483	52.25
328.	Wm. R. Davies, travel exp., com. med. ec., vouchers Nos. 328, 485	53.00
329.	State Legislative Service, com. p. h. l.	500.00
334.	Martin & Martin, attys., services med. def. case No. 317	75.00
342.	John Gwyer Press, printing, counc. dist. meetings, vouchers Nos. 342, 492, 545	$68.00
346.	F. M. Highberger, architect's floor plans	73.00
347.	W. K. McBride, city, school and county taxes, 230 State St., vouchers Nos. 347, 501, 515	498.94
349.	DeLuxe Labtys., film "Choose to Live"	18.73
352.	OK Letter Shop, mimeographing, com. p. h. l., vouchers Nos. 352, 425, 475, 509	93.35
353.	Frank Lehman, travel exp., com. med. ec., vouchers Nos. 353, 486	20.05
354.	Frank A. Lorenzo, trustee's travel exp., vouchers Nos. 354, 542	119.25
356.	E. Roger Samuel, trustee's travel exp.	57.00
358.	C. G. Brumbaugh, trustee's travel exp., vouchers Nos. 358, 511	60.55
377.	Walter F. Donaldson, secy., for deposit and cash payment exp. counc. comm. meetings	175.00
378.	Social Security Tax Reserve Fund	1,000.00
384.	E. H. Rauch, plumbing repairs, 230 State St.	72.25
388.	Jos. Scattergood, Jr., travel exp. and per diem, com. p. h. l.	24.25
391.	Jas. L. Whitehill, travel exp. and per diem, com. p. h. l.	37.52
417.	R. H. Hoffman, refund one-half 1941 dues a/c military service	5.00
423.	Peoples-Pgh. Trust Co., for purchase $10,000 par val. U. S. Savings Bonds Series "F" for med. def. fund, and $10,000 Series "G" for med. ben. fund	17,400.00
426.	Jos. H. Barach, travel exp., com. nutrition	20.00
427.	L. T. Buckman, travel exp., president-elect	151.04
428.	Wood, Struthers Co., for purchase $10,000 U. S. Steel 2¼'s for med. def. fund	10,186.88
429.	Pitt. Natl. Bank, for deposit in savings acct., endowment fund (not a disbursement, transfer only)	5,000.00
430.	Workingman's Sav. Bank & Trust Co., for deposit in savings acct., endowment fund (not a disbursement, transfer only)	2,070.26
431.	L. D. Sargent, trustee's travel exp.	150.16
433.	Penna. Conf. of Licensees	100.00
434.	E. B. Spaeth, travel exp., com. sci. work	10.70
437.	J. A. Shelly, travel exp., com. sci. work	8.50
439.	H. B. Anderson, travel exp., com. nutrition	15.40
447.	C. B. Lull, travel exp., com. sci. work	10.20
451.	Calvin Co., film "Bicycling With Safety"	17.50
477.	J. P. Dobo, settlement claim a/c adv.	250.00
481.	Remington Rand Inc., typewriter, child hlth. com.	51.26
482.	Geo. R. Harris, travel exp., com. med. ec.	46.80
484.	Jas. F. Schell, travel exp., com. med. ec.	26.15
494.	H. F. Flippin, travel exp., com. pneu.	10.00
500.	H. A. Moeser, com. pub. rel.	10.00
502.	L. H. Goldman, refund one-half 1941 dues	5.00
503.	J. A. Dunkelberger, refund one-half 1941 dues	5.00
506.	Wm. M. Donovan, travel exp., com. nutrition	15.00
507.	S. V. Algin, travel exp., com. nutrition	15.00
508.	H. L. Tonkin, travel exp., com. nutrition	11.50
510.	W. J. Stainsby, travel exp., com. pneu.	9.70
512.	W. H. Brownewell, electric fans	37.42
516.	Harrisburg Chamber of Commerce, dues	25.00
517.	M. T. Vanordstrand, lettering test. ctfs.	7.00
518.	E. L. Wareham, floral mem., Dr. Shaw	15.00
541.	E. S. Buyers, trustee's travel exp.	40.31
543.	P. P. Mayock, trustee's travel exp.	75.00
546.	Danl. L. Borden, travel exp., guest speaker	25.00
550.	Harry Staman, refund one-half 1941 dues	5.00
552.	C. C. Hubbard, refund one-half 1941 dues	5.00
555.	Wm. E. Jones, 2 mos. rent, off. child. hlth. com., vouchers Nos. 555, 579	80.00
557.	PENNA. MED. JOURNAL, adjustment due bill	50.00
574.	L. W. Myers, painting exterior 230 State St.	235.00
	Total	$148,508.84

Annual Audit

The report of the auditors has been completed for the year 1940-41 and will be available at the annual session or at the office of the secretary.

Conclusion

Your secretary acknowledges with appreciation the co-operation received from the officers of the State Society and all of its component societies, as well as from all committee chairmen and members, and the editorial staff of the JOURNAL. He sincerely hopes that ever-increasing unity between physicians may continue in Pennsylvania, tending, in the face of changing social, economic, and political conditions, to sustain the profession's true place in the eventual stabilization of the welfare of the commonwealth.

Respectfully submitted,
WALTER F. DONALDSON, *Secretary.*

REPORT OF THE TREASURER

Sept. 1, 1940, to Sept. 1, 1941

General Fund

CHECKING ACCOUNT

Receipts

To Cash—Balance on hand at beginning of fiscal year	$20,849.62	
Receipts during year	163,707.01	
		$184,556.63

Disbursements

By Cash—Paid vouchers Nos. 1 to 603 inclusive	$155,579.10	
Balance on hand, Sept. 1, 1941		$28,977.53

Special Funds .

MEDICAL BENEVOLENCE FUND

Receipts

To Cash—Balance on hand at beginning of fiscal year	$123,286.02	
Receipts during year:		
From dues	9,174.50	
Contributions	6,241.80	
Investment bonds matured or sold	17,236.30	
Interest on investments and deposits	3,967.39	
		$159,906.01

Disbursements

By Cash—Withdrawn for investment ($10,000), benefits ($10,208.41)	$20,208.41
Balance on hand, Sept. 1, 1941	$139,697.60

MEDICAL DEFENSE FUND

Receipts

To Cash—Balance on hand at beginning of fiscal year	$39,812.53	
Receipts during year:		
From dues	917.45	
Investment bonds matured or sold	4,728.96	
Interest on investments and deposits	1,309.77	
		$46,768.71

Disbursements

By Cash—Withdrawn for medical defense ($575), investment ($17,586.88)	$18,161.88
Balance on hand, Sept. 1, 1941	$28,606.83

ENDOWMENT FUND

Receipts

To Cash—Balance on hand at beginning of fiscal year	$23,357.06	
Receipts during year:		
Interest on investments and deposits	1,177.28	
Investment bonds sold ..	15,563.12	
Transfer from General Fund into savings accounts	7,070.26	
		$47,167.72

Disbursements

By Cash—Transferred to General Fund:		
For balance due on loan to Medical Service Association	$6,500.00	
For upkeep of library ..	1,905.50	
For transfer to savings accounts	7,070.26	
*Transferred to Dauphin Deposit Trust Company as reserve for Medical Service Association	17,313.96	
		$32,789.72
Balance on hand, Sept. 1, 1941		$14,378.00

SOCIAL SECURITY TAX RESERVE FUND

Receipts

To Cash—Balance on hand at beginning of fiscal year	$1,000.00	
Transferred from General Fund during year	1,000.00	
		$2,000.00

Disbursements

....	....
Balance on hand, Sept. 1, 1941	$2,000.00

INVESTMENTS

Medical Benevolence Fund

U. S. Treasury Bonds, 2⅞%, due 1955 Nos. 158204D-158205E-158206F	$3,000.00	
U. S. Savings Bonds, non-coupon, due 1950, Nos. 1542162 to 1542171 inclusive	10,000.00	
American Telephone & Telegraph Co., 5½%, 1943, Nos. 81983-59558-28598-28599-28600	5,000.00	
Buffalo, Rochester & Pittsburgh R. R., Consol. Mtg. Bonds, Nos. 15588, 16369-70; 3% cpns. 1940-46; 4½% cpns. 1947-57; income cpns. 1940-51)	3,000.00	
Wabash Railway Company, 5%, 1976, Nos. 6852-6853	2,000.00	
Canadian National Railways, 4½%, 1957, Nos. 62992-62993	2,000.00	
Ontario Power Co. of Niagara Falls, 5%, 1943, Nos. 05361-05362-05363-05364-09755	5,000.00	
Minnesota Power & Light, 1st Ref., 4½%, 1978, Nos. 11566-11567-11568-11569-11570	5,000.00	
United States Savings Bond, Series "G," 1953, No. X4516G—registered	10,000.00	
Total		$45,000.00

Medical Defense Fund

U. S. Treasury Bonds, 3¼%, due 1944-46, No. 8218A	$5,000.00	
Nos. 41948J-41949K	2,000.00	
U. S. Treasury Bonds, 2⅞%, 1955, No. 158614D	1,000.00	
U. S. Savings Bonds, non-coupon, 1949, Nos. M475345D-346D-347D, and M475350D to M475356D inclusive	10,000.00	
Buffalo, Rochester & Pittsburgh Cons. Mort., 4½%, 1957; 3%, 1940 to 1946; 4½%, 1947 to 1957; income coupons, 1940-1951	2,000.00	
Canadian National Railways, 4½%, 1957, No. 62994	1,000.00	
Western Pacific Railroad Co., 5%, 1946, Nos. 8204-5044-5045-10347-18971	5,000.00	
U. S. Steel Corporation Debenture Series, 2¼%, 1951, with Nov. 1, 1941, coupons, Nos. 53550 to 53559 inclusive	10,000.00	
U. S. Savings Bonds, Series "F," due 1953, No. X4068F, registered	10,000.00	
Total		$46,000.00

Endowment Fund

Chicago & Northwestern Railway, 4¾%, 1987, Nos. 132938-134029-137409	$3,000.00
U. S. Treasury Bonds, 2⅞%. due 1955, Nos. 279933C-934D-935E-936F-937H-114457H-114458J	7,000.00*
U. S. Savings Bonds, Series "G," 1953, Nos. X42286G, V11809G, M91397G, M91398G	17,000.00*
Total	$27,000.00

Bonds defaulting interest payments: Wabash Ry. Co., in 1932; Western Pacific R. R., 1934; Chicago & Northwestern Ry., 1935; Buffalo, Rochester & Pgh. Ry., 1939, partial payment 1940-1941.

In addition to the above, the society holds title to the property at 230 State Street, Harrisburg, occupied by the offices of The Pennsylvania Medical Journal.

Respectfully submitted,
John B. Lowman, *Treasurer.*

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REPORT OF CHAIRMAN OF BOARD OF TRUSTEES

To the President and House of Delegates:

At the organization meeting of the Board of Trustees held in Philadelphia, Oct. 2, 1940, the following were duly nominated and elected to serve for one year: Chairman, Dr. Robert L. Anderson; clerk, Dr. Frank A. Lorenzo.

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* Held in Dauphin Deposit Trust Co., Harrisburg, forming reserve fund required of Medical Service Assoc. of Penna. by State Insurance Department.

The chairman then expressed to Dr. Edgar S. Buyers the appreciation of the board members for his faithful and efficient service as chairman of the board during the preceding 8 years. He next called upon Dr. Alexander H. Stewart, retiring trustee and councilor from the Ninth District, to present his newly elected successor, Dr. Frank A. Lorenzo, of Punxsutawney. He also presented Dr. John J. Brennan, of Scranton, who was re-elected trustee and councilor from the Third District.

Mr. Lester H. Perry was re-elected managing editor of the Journal and manager of sessions and exhibits.

Mr. Charles E. Kenworthey was re-elected legal counselor of the society.

At this point the secretary presented the budget for the ensuing year, as submitted by the Finance Committee. The budget was regularly adopted.

President Francis F. Borzell was then presented by the chairman and he pledged him the support and cooperation of the board. He next requested him to present for the consideration of the board his proposed appointees to the Committee on Public Health Legislation and to the Committee on Public Relations.

In acknowledgment President Borzell pledged faithful participation, requesting the full support of all members of the board throughout his administrative year. His recommendations as to the chairmanship and the personnel of the Committee on Public Health Legislation were approved by unanimous vote, as were the proposed appointees to the Committee on Public Relations, each to serve 3 years.

Committee appointments for the ensuing year were announced as follows: *Executive,* Drs. E. Roger Samuel, Norbert D. Gannon, Cloy G. Brumbaugh;* *Finance,* Drs. John J. Brennan, Peter P. Mayock, Edgar S. Buyers; *Publication,* Drs. George C. Yeager, John P. Harley, Laurrie D. Sargent; *Library,* Drs. Park A. Deckard, Clarence R. Phillips, Frank C. Hammond,† Frank A. Lorenzo; *Benevolence,* Drs. Harry W. Albertson, E. Roger Samuel, Clarence R. Phillips, Walter F. Donaldson.

In addition to the series of meetings held by the Board of Trustees during the 1940 convention in Philadelphia, regular meetings were held at 230 State Street on Dec. 10, 1940; Feb. 4, and May 13, 1941; and a special meeting of the board was held in the society's building, Apr. 1, 1941 (see the call to this important meeting and its minutes, pages 1043-46, May Pennsylvania Medical Journal).

Executive Committee Created

With the hope of giving more prompt attention, and, if possible, more consideration to organizational problems coming before the board in the interim between annual conventions of the society and more especially between regular meetings of the board, favorable action was taken upon the following recommendation made to and approved by the 1940 House of Delegates in the annual report of the trustee and councilor of the Tenth Councilor District:

> "Authorizing and appointing an Executive Committee of the Board of Trustees for the purpose of meeting in January, March, April, July, September, and November to study problems presenting themselves in the interim between the October, December, February, and May meetings of the Board of Trustees and advising the board after committee consideration."

The Executive Committee is composed of the following: the chairman of the board; the chairmen, respectively, of its Finance Committee, Publication Committee, and Building Maintenance Committee (former Executive Committee); and, ex officio, the president, the president-elect, and the secretary of the society. Meetings have been held on the following dates: Jan. 7, Mar. 12, May 22, July 9, and Aug. 14.

As is the case with all regular meetings of the Board of Trustees, most of the meetings of its Executive Committee have been attended by representatives of, or have considered formal reports from such standing committees of the society as Public Health Legislation, Public Relations, Medical Economics, and numerous special committees.

Printed Minutes

Fortunately, generous excerpts from the minutes of meetings of the board have been published in the Officers' Department of the February and May, 1941, issues of the Journal. Important actions taken by its Executive Committee have appeared in the August issue, printed as distributed to 4 or 5 officers of each component society.

With the understanding that clip sheets of all the minutes and excerpts referred to will be forwarded to the members of the appropriate reference committees of the 1941 House of Delegates at least one month in advance of the first meeting of the House, it becomes apparent that it may not be necessary for the chairman of the Board of Trustees to burden this annual report with any considerable detail of board action.

The printed minutes of the Dec. 10 meeting deal especially with topics referred to the board by the 1940 House of Delegates. Prominent among these are items that may be found in the 1941 report of the Committee on Medical Economics to the House of Delegates, as published in the September, 1941, Journal. This is equally true of activities of the Committee on Public Health Legislation and the Advisory Committee to the State Department of Public Assistance, both of which have interest-compelling annual reports appearing in this issue of the Journal.

Adjusted to Meet New Conditions

The accomplishments of the Finance Committee of the Board of Trustees of our society since its 1940 convention are especially called to the attention of the members of the House of Delegates as well as of the entire membership of the society. Although this committee makes no direct report to the House of Delegates, the results of its recent endeavors may be found in the published financial reports from the offices of the treasurer and the secretary of the society.

Confronted with falling income from securities in the various funds of the society as well as continued defalcation on interest payments of other securities, the Finance Committee, with the approval of the Board of Trustees, decided to employ financial counselors. A favorable agreement was arrived at during special meetings of the Finance Committee, attended by your chairman or the secretary of the society, which were held with the counselor representing Wood, Struthers & Company of New York City. Defaulted bonds have been disposed of to the best possible advantage and the funds thus obtained reinvested in United States government securities returning approximately 3 per cent.

Cash funds have been further distributed to savings banks throughout the state where they draw 1½ to 2 per cent interest and plans have been completed for the distribution (October, 1941) of at least $40,000 additional cash to 8 additional savings banks throughout the state, insured (FDIC) and to draw interest at rates ranging from 1½ to 2 per cent.

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* Deceased Aug. 31, 1941.
† Deceised Apr. 12, 1941.

In addition, the Board of Trustees, advised by its Finance Committee and the society's legal counselor, has handled well the $25,000 in securities and cash advanced by The Medical Society of the State of Pennsylvania to the Medical Service Association of Pennsylvania, as required by the enabling legislation and the State Insurance Department. The entire amount is now in United States securities, the income from which is paid to the endowment fund of the State Society, from which fund, as authorized by the House of Delegates, the above-mentioned sum was withdrawn.

Publication Committee

Due to the illness and death on Apr. 12, 1941, of Dr. Frank C. Hammond, for 15 years the successful editor of our society's official publication, the past year has witnessed gradual changes in the personnel of the editorial staff as well as in the format of the PENNSYLVANIA MEDICAL JOURNAL. As is usually the case in well-organized and carefully supervised official activities, the JOURNAL has not lost value or prestige. Through the experience of its managing editor, its editorial assistants, its Publication Committee, its well-selected contributing editors, and the society's secretary, for 22 years responsible for the Officers' Department, the PENNSYLVANIA MEDICAL JOURNAL is expected to continue to progress.

Your chairman desires in this report to pay tribute to the faithful manner in which Dr. Hammond served the society for so many years. His quiet efficiency in the discharge of his official duties, his earnest and sincere approach to every problem which confronted him, and his never-failing kindness and courtesy earned for him the love and esteem of all who knew him.

Organizational Survey

Among the responsibilities referred to the Board of Trustees by the 1940 House of Delegates was that of further study of practical values to the society of a survey of its constitutional and administrative framework and the estimated costs of such a survey. The subject has been frequently and freely discussed and proposals regarding the extent and the estimated cost of such a survey have been submitted by 3 well-known management companies—one located in Philadelphia, another in Pittsburgh, and a third in Cincinnati. These communications, estimates, etc., with appropriate comments, will be submitted to the House of Delegates at its opening session.

NYA Activities

Since the February meeting of the Board of Trustees, considerable study has been devoted by the Executive Committee of the Board of Trustees and the Medical Economics Committee of the society to the proposed National Youth Administration health movement in Pennsylvania. The recommendations of the Committee on Medical Economics, fully supported by the Board of Trustees and later accepted by federal and Pennsylvania representatives of the NYA (see Officers' Department, August and September JOURNAL), have been distributed to all component societies with the advice that a co-operating committee be created in each component society.

Conclusion

It is hoped that component societies will continue to be patient and promptly co-operative following the receipt of requests and suggestions from officers and committee representatives of the State Medical Society. Such communications may seem frequent and at times appear to be unnecessary unless they are as carefully considered by the officers and committeemen of the component societies as they have been studied by the Board of Trustees whose members pass upon such communications. A clearer understanding of most of the problems involved would undoubtedly follow if more of the State Society membership followed carefully the reports, the minutes, the suggestions, the requests, the comments, and the information which appear each month in the Officers' Department of the PENNSYLVANIA MEDICAL JOURNAL.

On June 24 the medical profession of the state of Pennsylvania lost a very ardent friend and one who, although his years of service were short, had endeared himself to the officers of our society. Dr. John J. Shaw's death was sadly felt by all members of your board, and his counsel, advice, and co-operation have been greatly missed. Your chairman attended his funeral at Philadelphia, representing the Board of Trustees of The Medical Society of the State of Pennsylvania.

Your chairman again wishes to call to the attention of the membership the meticulous care and constant devotion of the secretary of this society to his many and varied duties.

The chairman desires to express deep appreciation of faithful attendance and helpful service contributed by members of the Board of Trustees, other officers of the society, and the various office assistants.

Respectfully submitted,
ROBERT L. ANDERSON, *Chairman.*

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REPORT OF THE HARRISBURG OFFICE

To the Board of Trustees:

It has been customary for the past several years to present in this report a rather comprehensive discussion of the problems encountered and the results accomplished in the activities of the Harrisburg office.

This year, however, it has been decided to condense into brief tabular form a 10-year record of the growth in the traditional activities and the income of the Harrisburg office as well as the expansion into new fields of endeavor.

Although the accompanying table is self-explanatory, it is well to call attention to a few of its most significant items.

Practically every item for 1940-41 shows an increase over the figure for the preceding year. This, however, is not the case regarding the number of pages in the annual volume of the JOURNAL. The decrease in this item is due to a deliberate attempt on the part of the editorial staff to limit the size of the JOURNAL in the face of rising production costs.

There are no quantitative data regarding the assistance rendered by the Harrisburg office in public health legislation and its related activities. The character of this service makes quantitative estimates very difficult. Some idea of how this phase of the work has been increasing can be gathered from the record of the number of meetings held at the headquarters building. The increase in the number of such meetings from 11 in the year 1936-37 to 51 in the year 1940-41 is due largely to the activities of the Committee on Public Health Legislation, the State Healing Arts Advisory Committee, and the Conference of Professional Licensees.

The percentage increase for 1940-41 over 1931-32 ranges from a 24 per cent rise in the circulation of the JOURNAL to the very gratifying jump of 191 per cent

ACTIVITIES OF HARRISBURG OFFICE

Tabular Record of Growth During Past Ten Years
1931-32 to 1940-41

Year	Journal			Convention Income	Number of Meetings Held in Building	Library		Total Income	Participation in Activities of—		
	Circulation	Number of Pages	Income			Requests Filled	Reprints Loaned		Committee on Public Health Legislation	State Healing Arts Advisory Committee	Conference of Professional Licensees
1931–32	8,276	1,200	$10,782	$4,187	No record	None	None	$16,344	No	No	No
1932–33	8,255	1,232	7,873	4,525	No record	None	None	13,689	No	No	No
1933–34	8,583	1,336	7,438	5,145	No record	None	None	13,615	No	No	No
1934–35	8,742	1,312	7,895	6,173	No record	None	None	14,908	No	No	No
1935–36	8,800	1,376	9,899	6,300	No record	128	1,604	17,305	No	No	No
1936–37	9,247	1,560	11,256	9,893	11	219	3,512	21,960	No	No	No
1937–38	9,298	1,596	11,798	9,110	20	319	4,548	22,085	No	No	No
1938–39	9,747	1,648	11,736	9,355	31	370	5,403	21,931	Yes	Yes	No
1939–40	10,037	1,896	14,013	11,279	33	531	7,530	25,928	Yes	Yes	Yes
1940–41	10,276	1,760	15,591	12,190	51	515	7,729	28,124	Yes	Yes	Yes
Increase 1940-41 over 1931-32.	2,000	560	$4,809	$8,003	..	515	7,729	$11,780	....	....	....
Percentage of increase	24%	47%	45%	191%	..	....	.....	72%	....	....	....

in the convention income. Our revenue from the sale of technical exhibit space for the past year fell just short of trebling that for the year 1931-32. Space reservations for the coming session at Pittsburgh indicate that next year's total will exceed this year's by a considerable margin.

It is impossible to portray percentage increases for the 10-year period with regard to the number of meetings, the work of the library, and the assistance rendered to Dr. Chauncey L. Palmer in his various responsibilities.

No record of the number of meetings was kept prior to my incumbency in 1934, and our records for 1935-36 are not complete. It is reasonable to assume, however, that they were at a minimum prior to 1935 because it was not until then that the building was equipped to accommodate them.

One of my first jobs was the installation of the package library service, which was non-existent prior to 1935. Although the number of requests filled during the year just closed shows a slight decrease from the preceding year, the steady growth of the library for 6 years indicates that it is serving a useful purpose.

It was not until 1938 that the activities of the Committee on Public Health Legislation and the State Healing Arts Advisory Committee were centered in the Harrisburg office. Since 1939 our building has served as the place for meetings of the Conference of Professional Licensees. Incidentally, it is not the purpose of this report to include a discussion of these activities. They are outlined in detail in the report of the Committee on Public Health Legislation.

During the year Dr. Frank C. Hammond, the editor of the JOURNAL, passed away. He was a kind and loyal friend to all of us at the Harrisburg office, and we miss him.

We are fortunate, however, in having as his successor Dr. Walter F. Donaldson, and we are grateful for his helpful guidance and friendly counsel.

No other personnel changes occurred during the past year. The morale of the Harrisburg staff has, in my opinion, never been higher.

LESTER H. PERRY, *Managing Editor and Convention Manager.*

REPORTS OF INDIVIDUAL COUNCILORS

FIRST COUNCILOR DISTRICT

(Philadelphia County)

To the President and House of Delegates:

We held our councilor district meeting on Nov. 13, 1940, at which time a suitable program was presented and State Society certificates were given to 6 members of our society who had been in practice for 50 years, all of whom had added honor and distinction to their profession—Drs. J. Wesley Anders, Lida Stewart Cogill, Samuel McClintock Hamill, Ludwig Loeb, James William McConnell, and E. Quin Thornton. The State Medical Society was represented on the program by President Francis F. Borzell and President-elect Lewis T. Buckman.

The Woman's Auxiliary of the Philadelphia County Medical Society has been most loyal and has supported the work of the county society in every way. It has raised over $1000 for the Aid Society of the county medical society and the benevolence fund of the State Medical Society.

The membership of this district is the highest in history. The Philadelphia Society had, on the day of writing, 2478 members, a gain of 126 members.

We are looking forward to continuous activity during the coming year.

In reporting more in detail I cannot do better than quote from the July 1, 1941, report of Dr. Edward L. Bortz, retiring president of the only component society in this councilor district:

PHILADELPHIA COUNTY SOCIETY

The Philadelphia County Medical Society, through its Committee on Medical Preparedness for National Defense, has offered its fullest co-operation to both the Army and Navy local headquarters. The society has been working in close relationship with Governor Arthur H. James through the office of State Director of Selective Service William Mather Lewis in recommending physicians to serve on local registration and medical advisory boards. The physicians who have consented to render this patriotic service display a great interest in maintaining the efficient standards and methods of examination of selectees.

A series of 16 lectures on medical preparedness were delivered at the society building. Those who attended the course profited greatly.

Information received from classification questionnaires for evaluation of qualifications for service in the event of a national emergency that were sent to every physician in Philadelphia proved to be of great value to the local military authorities as well as to the Committee on Medical Preparedness of the State Society. A questionnaire likewise sent to all local registration boards and registration board examining physicians has produced results in maintaining high standards.

The United States Public Health Service, with the full co-operation of the Committee on Venereal and Cutaneous Diseases of the Philadelphia County Medical Society, instituted and is at present making a survey of the incidence of venereal disease in Philadelphia.

Several lectures, both on the platform and on the radio, on the subject of social hygiene have been delivered before lay groups during the past year, and it is believed that some progress has been made in the direction of arranging such lectures for all Philadelphia high school students.

The society has again maintained its leading position in postgraduate medical education as indicated during its 1941 institute, which had the largest attendance in the history of the institute.

In May a health supplement sponsored by the Philadelphia County Medical Society appeared in the Philadelphia *Record*. This newspaper in turn donated $500 to the Aid Association of the county society.

The work and findings of the numerous special committees have been very encouraging. The maternity mortality rate as compared with the year 1931, when the Committee on Maternal Welfare began its work, shows a very marked decrease.

The study and control of pneumonia has been greatly facilitated. The society has enjoyed the active assistance of the Departments of Health of the City of Philadelphia and of the Commonwealth of Pennsylvania.

Ten scientific meetings were conducted by the society with a total attendance of 2065.

The Philadelphia County Medical Society is endeavoring to protect the professional interests of physicians absent in national defense service. A form showing proper notification to the patient, together with suggested financial arrangements to be made with patient and substituting physician, has appeared in the society's weekly publication; also a recommendation has been made and approved by the board whereby all doctors called into service who have held teaching positions in the various institutions should have merely a leave of absence with permission to return to their teaching posts after active service.

During the past year a total of 120 lectures and 35 radio addresses have been presented by society members before lay audiences. The Public Relations Committee likewise inaugurated a training course in public speaking and in radio broadcasting. This course was enthusiastically received by a considerable group of members who are as a result better equipped to meet demands for lectures before public audiences.

Under the Pennsylvania plan for penal psychiatric work, a scholarship was offered this year to a young physician, making it possible for him to be specially trained in penal psychiatry.

In 1941 the Commission for the Preservation of the Health of the Physician was formed. This commission will study 1000 physicians for a period of 3 years, and by its findings perhaps the life span of the doctors will be lengthened.

Committees so appointed have recently been making a survey of diabetic mortality and anesthesia mortality.

From the reports of 60 active committees the past year has been a successful one. The Philadelphia County Medical Society is indebted to its members for their vital interest and support. It likewise expresses gratitude to The Medical Society of the State of Pennsylvania for guidance in many of its numerous projects and its assistance in making the Philadelphia County Society one of the outstanding component societies throughout the country.

George C. Yeager,
Trustee and Councilor.

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SECOND COUNCILOR DISTRICT

(Berks, Bucks, Chester, Delaware, Lehigh, Montgomery Counties)

To the President and House of Delegates:

The county medical societies comprising the Second Councilor District have been officially visited by the councilor one or more times during the past year.

Many new problems have presented themselves since the 1940 report. These will be discussed under the county societies individually.

The 1940 councilor district meeting was held at Quakertown in Bucks County, with the largest attendance ever recorded at a like meeting in the Second District. Dr. Clay Ray Murray, of New York City, was the guest speaker, and gave an excellent illustrated talk on "Fractures of the Extremities." Certificates of honor in recognition of the completion of 50 years or more of medical practice were presented to Drs. Clarence J. Kurtz, Chester County; Martin J. Backenstoe, Lehigh County; George F. Potteiger, Berks County; and James T. Taylor, Chester County. (A full account of the meeting was published in the October, 1940, Pennsylvania Medical Journal.)

The councilor commission meeting was held at Valley Forge Hotel, Norristown, May 28, 1941. President Borzell spoke on "Medical Defense Preparedness." Dr. C. L. Palmer gave an excellent talk on "The Proposed Amendments to the Medical Practice Act." Both subjects were thoroughly discussed by those in attendance. (See pages 1328-30, July, 1941, Pennsylvania Medical Journal.) Thirty members were present.

Since the Mar. 1 adjustment of professional fees in the Public Assistance program, physicians in the district are much better satisfied and the work is progressing without the criticism of former years.

Many of our members are serving with distinction on the various registration boards for selectees. Almost without exception those asked to serve last October consented, and the various boards have been augmented by additional physicians, with but few declining to serve.

The councilor has noticed during his visits to component societies and in the various society reports that about 50 per cent of the members seldom or ever attend their own society meetings. Of the other 50 per cent about 35 per cent are regular attendants. This is a regrettable condition in these days when most scientific programs are at their best and the "business of medicine" is a large part of each society's function and should be well understood by every member of a county society. Our profession's motto for 1942 should be "Bigger and Better Attendance at All County Medical Society Meetings."

The report of a councilor is of necessity a summary of the activities of individual societies of the district. The appended gives a brief survey of the work of the 6 counties during the year.

BERKS COUNTY SOCIETY

Berks County Medical Society has shown an increase in membership, having at the present time 203 active and 10 affiliate members. During the year the society held 10 scientific meetings, with an average attendance of 54. Two social meetings were held; namely, the annual winter banquet and the summer picnic.

The scientific programs were outstanding. The following were guest speakers: Drs. Emil Novak, Walter E. Dandy, Perrin H. Long, Samuel A. Cosgrove, Francis C. Grant, Edward A. Strecker, Franklin L. Payne, and Karl M. Houser.

The society has been active with the cancer program. Many speakers from the society took a very active part in addressing various meetings. Fourteen lay organizations were addressed with a total of 1600 persons contacted. There were several radio programs, one all-day open forum, and tumor clinics in the various hospitals 3 or 4 times monthly.

The Child Health Committee did excellent work during the year and the following is a summary of their accomplishments:

From Jan. 1, 1940, to Dec. 27, 1940.

100 vaccinations
100 children given toxoid
46 eye defects
15 ear defects
12 nasal obstructions
139 tonsillectomies
19 malnutrition
9 orthopedic defects
135 children received dental care
20 circumcisions
2 cervical gland defects corrected
1 thyroid case
3 lung affections
9 cardiac defects
1 venereal disease
4 cases of deficiency disease

The members have responded very well in the matter of examining selectees. Several of the groups have complete teams, which tends to lighten each examiner's work. Some of the examinations are made in offices, some in public buildings, and some in hospitals. One of the organizations has Gray Ladies to act as clerks.

No special measure has been taken concerning the professional interests of members who are in military service. It is thought that those who remain at home will take care of the matter with fairness to all concerned.

The National Physicians' Committee has received financial support from many of the members of the society and at least 10 have become charter members.

The speakers' bureau is excellently organized and is called upon very frequently for speakers.

BUCKS COUNTY SOCIETY

Bucks County Medical Society has added 3 new members during the year, making a total of 77. It has held 6 regular meetings at convenient points in the county, with an average attendance of 28. The scientific programs have all been presented by guest speakers.

The speakers' bureau is well developed and many members have given freely of their time and ability in addressing lay groups on topics pertinent to public health, principally cancer, tuberculosis, pneumonia, and appendicitis. These meetings were arranged through the State Department of Health, in co-operation with the society.

At frequent intervals the representatives and state senator were contacted, requesting their helpful co-operation in health legislation.

The physicians to the registration boards are giving freely of their time and efforts in examining selectees. Many of the examining physicians feel that there should soon be closer co-operation between the local board, advisory board, and induction board (this is being worked out in other counties in the Second District).

The county society has voted unanimously to refund the annual dues of all members called into active service. To date 3 members have entered the service and have had their dues refunded by the society. They will continue to hold membership in the county and state organizations, and the county society will remit to the State Society the usual $10 annual assessment for such members.

CHESTER COUNTY SOCIETY

During the year Chester County Medical Society has held 8 scientific meetings, 2 business meetings, and one picnic. The average attendance was 31. Scientific meetings were addressed by men prominent in the field of medicine and teachers from neighboring medical schools. Other scientific programs were presented by members of the society.

The Economics Committee, which also constitutes the Medical Preparedness Committee, has been very active in collecting fees for physicians absent in military service. The members of the society have agreed to turn over to such absentee physicians up to 50 per cent of the amount collected. The Committee on Medical Economics meets regularly each month. This committee made an extensive study of the various clinics in the county, both as to location and medical supervision.

Dr. Robert T. Devereux, president of the society, has made an elaborate study during the past year of hospital insurance and has made many valuable contributions on this subject from his activity in both the Associated Hospital Plan of Philadelphia and the Inter-County Plan.

The society's Public Health Commission has been very active in supervising the public health activities in the county. The commission has given every encouragement to the parent-teachers' association, both in connection with the preschool summer round-up and diphtheria immunizations. The policy of the society has consistently been to encourage this work to be done in the private physician's office rather than in mass clinics. The Public Health Commission has made a study of the merits and dangers in tuberculin testing of school children throughout the county. The commission, through its chairman, Dr. Kenneth S. Scott, has been much interested in the proposed N. Y. A. program in the state and has taken a leading part in the discussion of this matter. The 1941 institute in observation of Public Health Day was limited to the subject of diabetes. Several members prominent in this field addressed the lay audience.

The Medical Advisory Committee has met each month and carefully supervised the work of the Public Assistance program. On the whole the members of the society have been both interested and co-operative in this program.

Many members of the society are examining registration board selectees. On June 17 a special meeting was held under the auspices of the Chester County Medical Society to which were invited the various registration board examiners of the Second Councilor District. The medical induction board for the second appeal area was present at this meeting.

The speakers' bureau of the society has been responsible each month for securing speakers for lay meetings on public health subjects.

The society has been much interested in the work of the National Physicians' Committee for the Extension of Medical Service, has contributed $25 as a society, and additional sums from individual members.

This society has lived up to its reputation during the past year as an active and interested medical group and anticipates an even more active year during 1941-42.

DELAWARE COUNTY SOCIETY

Regular meetings are held monthly by Delaware County Medical Society from September to June inclusive. The attendance varies from 30 to 60. The group of members comprising the speakers' bureau have been very gracious in giving their time to address public meetings on medical subjects and economic problems.

The physicians attached to the registration board have worked faithfully and have formed teams to make the examinations more efficient. It is worthy of note that many lay people in their expressed criticisms evidently believe that the physicians are paid handsomely for this patriotic service. The society has published notices of the means proposed to protect the professional interests of physicians absent in military service. Many of the absentees refer work to friends of their own choosing.

The plans of the National Physicians' Committee have not been received with much enthusiasm in this society. The board of directors has taken no definite action to date.

LEHIGH COUNTY SOCIETY

Lehigh County Medical Society is very active. Meetings are held monthly, with an average attendance of between 80 and 90. The society in conjunction with the Allentown Chamber of Commerce secured Dr. Charles Frederick W. Bove, surgeon of the American Hospital in Paris, to speak to the community in general at an open meeting, and to the medical society at a special meeting. Enthusiastic audiences attended both meetings.

The city of Allentown, encouraging home defense, has zoned the city whereby volunteer fire protection will evolve under the direction of wardens to be appointed.

The town of Emmaus has gone much further than this and has zoned its territory under wardens for transportation, fire, and instruction in health and Red Cross work. In Lehigh County there has been considerable emphasis on the blood typing of many persons so that a readily available nucleus of donors may be obtained on short notice in any emergency.

The society is represented on the advisory board of the board of health in the city of Allentown.

Thirty-five members have been engaged in the examinations for the local registration board. A group system for examiners has been installed by which greater efficiency has been obtained.

During the past year representatives of the society, under the Committee on Appendicitis Mortality, have delivered illustrated lectures to all the students in high schools and junior high schools, to all the various service clubs, to the women's clubs, and to other organizations.

The society voted a contribution from its funds to the National Physicians' Committee, Pittsfield Bldg., Chicago, Ill., and individual members have also subscribed.

MONTGOMERY COUNTY SOCIETY

The Montgomery County Medical Society has 263 active members, 5 affiliate members, and one honorary member. Ten scientific meetings were held during the year, 8 at the society's own building in Norristown, one at Pottstown Hospital, and one at the Abington Memorial Hospital. This was a joint meeting with the Bucks County Society and the staff of the hospital. Several social meetings were held at the society's home during the year. The average attendance at regular meetings was 45. The attendance was reduced at meetings held outside the society's home building.

The membership is proud of its home. With the income from rentals it cost the society less than one cent per member per day to run the building. The woman's auxiliary has been much interested in the society's home and has made many valuable contributions to it.

The York Road Branch of the society was organized in October, 1940, and meets regularly at the Abington Memorial Hospital.

An active program committee exercises unusual care in the choice of subjects and speakers. Professors in the various medical colleges in Philadelphia are usually the guest speakers.

The 3 most active committees in the society are the Medical Advisory Committee to the County Public Assistance Board, Public Health Legislation Committee, and Program Committee.

Chairman Albert R. Garner of the first-mentioned committee makes a report of the allotment and expenditures therefrom at each regular meeting.

The society inaugurated a speakers' bureau during the winter and engaged a man well trained in public speaking to supervise the instruction of the volunteer speakers. As a result the society's membership now includes a number of well-trained speakers on medical and health subjects willing to serve.

While the process leading to the original selection of physicians to the various local registration boards by the House of Delegates to the State Society at the Philadelphia convention last October was somewhat disconcerting, nevertheless those chosen accepted their appointments with the thought that their work as examiners constituted a contribution to the nation's defense program. Later the question of liability for malpractice during the course of the examinations was thoroughly discussed. Finally, the federal attorney general announced that the various United States attorneys would protect the interests of the registration board examiners in any threatened or instituted alleged malpractice suits.

The remarks of one physician at a meeting of the society may well be quoted: "The work of the registration board physician is an education in living pathology; it enables him to recognize disease in its earliest stages, it trains him in preventive medicine, it enables him to use prehabilitation methods to improve the health of the registrants, and it gives him the satisfaction of knowing that he is doing his part in the national defense program." The society has adopted the recommendation of the State Society in the protection of professional interests of physicians absent in national defense service.

The society has supported the National Physicians' Committee individually and collectively, having donated $25 from its treasury besides individual contributions.

There has been much controversy in the society as to the exact aims of this committee.

Edgar S. Buyers,
Trustee and Councilor.

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THIRD COUNCILOR DISTRICT

(Carbon, Lackawanna, Monroe, Northampton, Pike, Wayne Counties)

To the President and House of Delegates:

The Third Councilor District has been short shifted the past year due to unavoidable circumstances. However, the membership has been active and alert.

The Selective Service Registration Board examiners appointed by the Governor from lists submitted by our State Society have rendered splendid service. They stepped right into the work at the request of the government asking no questions.

Although the work done by physicians is donated to the government for the good of the cause, it is to the credit of the men asked to serve that very few have refused.

Due to a misunderstanding as to the physical standards, many men passed by the Selective Service boards were rejected by the Induction Center. There was great variance in the rejections from different sections.

Examiners on the various boards have developed their own method as to when and where to examine the draftees. Some have done the work in their offices. This is an arduous method and an endless task from day to day.

One board has selected a hospital for assembly every Sunday morning at 10 o'clock. From 20 to 40 selectees present themselves for examination. With 6 doctors at hand, it requires approximately 2 hours to examine the group. This is done weekly, and when the number classified 1-A reaches 60, we postpone examining until these are called. So far, we have none held more than 30 days and have re-examined none.

In May our Induction Center was set up at the request of Col. Don G. Hildrup, Third Corps Area, Baltimore, Md. The West Side Hospital, Scranton, was selected as the location. The examining doctors' names were sent to the Army headquarters and approved. About 70 names were sent in making up 10 teams. Men selected on set days for examinations are notified about one week in advance, so that they may have ample time to arrange their work or let the board know in time to get another examiner. To date we have had only 4 men refuse to examine draftees at the Induction Center. We feel that if required we are able to examine 300 a day.

By this means I wish to express appreciation to the army officers, our men at the Induction Center, the hospital superintendent and her corps of nurses, and the office workers for their assistance and courtesy.

Members from the Third District have made arrangements with their respective county societies to conserve their practices while absent in the nation's service. The man in service is to receive one-third of the amount collected from his former patients. The physician taking care of such patients may make his arrangements with the physician's family or through the county medical society.

Our district has been very fortunate the past year in regard to malpractice suits, there being no new cases to report. This is a great relief and is worthy of note since many of our former cases were due to untimely remarks made by others.

Due to economic conditions, our State Society thought it advisable to seek advice for the protection and conservation of our finances. During the past year we have had the assistance of financial counsel, and you will make note of this in reading over the reports for the year of other officers.

The work of the councilors has increased to such an extent that it is an arduous task, and the trustees' work has increased manyfold. I would suggest that the House of Delegates give serious thought to the resolution before the House proposing a change.

The report of our 1941 district meeting will be found in the report of the councilor for the Twelfth District. It makes little difference to many members as to the location of this annual meeting, its program, or who the speakers may be. The same crowd, the old reliable "bone and sinew" of the organization are always there. The members who need it most and who are the greatest critics are always absent.

John J. Brennan,
Trustee and Councilor.

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FOURTH COUNCILOR DISTRICT

(Columbia, Montour, Northumberland, Schuylkill, Snyder Counties)

To the President and House of Delegates:

The county medical societies of the Fourth Councilor District have maintained a high standard of work during the past year. All have been interested in the work of their own societies primarily, but have contributed largely to the success of the State Medical Society by the action of their component committees. Our district is well represented on the State Society's committees and commissions. The representatives on such committees from the district are outstanding men in their respective fields of work and have faithfully and effectively performed the chores handed to them by the various chairmen.

The societies of this district are small and the committees small, too, but I think the smaller societies have a more personal touch within their membership than the larger societies. I have noticed a tendency to become too serious. The county groups which get along the best are those which mix a little fun with their work. Several of our district groups have been holding evening meetings followed by social gatherings. Others have luncheon meetings, and the remainder meet and transact county society business, followed by a scientific program.

The year 1941 has definitely demonstrated that the societies which provide those who attend meetings with a little relaxation either before or after their programs are maintaining the largest attendance. Much of the county society business is thoroughly discussed at informal group meetings either before or after the meetings.

Our health legislation program has been received by the members with interest and their reactions to requests for action contributed heavily to the sense of relief enjoyed in the knowledge that the 1941 Legislature has adjourned without the enactment of much, if any, harmful health legislation.

Our members have performed splendidly on the numerous Selective Service registration boards. The work has been heavy, the complaints slight. Final rejection of some of the men approved by local boards by a central Selective Service board has caused some confusion and not a few recriminations, but that situation has been largely corrected.

Each county society has worked with the State Department of Health in supplying speakers for the health instruction programs. Thousands in this district have been thus contacted through speakers from the county medical societies. This work may be further simplified by assigning to members of county society committees on cancer, appendicitis, and pneumonia control the work of preparing and delivering short interesting talks to public groups. Some of the speakers' bureaus now have a list of members whereby names are drawn from the top and a speaker may be asked to speak on any subject at any time. The "selective service" plan above suggested would be better.

Several societies complain that few younger members attend their meetings. It has been suggested that young men joining the society be put on as associate members for one year, during which period they must attend at least one-fourth of the meetings of the society for that year before they become active members. If they get the habit of going to meetings, they are much more apt to keep it up. It is said that too many young men join county medical societies largely to qualify for a chance at state or county health department appointments or to examine for insurance companies. Many of these never attend meetings and contribute nothing but dues to earn the advantages they receive.

Another criticism heard is of the long and cumbersome name under which our state society is chartered. Does the fact that Pennsylvania is a commonwealth make the titular phrase "of the state of" superfluous?

During the coming year we will be called upon to do many things in the name of patriotism. Let us beware how far we go and that we do not become so patriotic that we "sell down the river" many of the principles that we have struggled for years to maintain.

COLUMBIA COUNTY SOCIETY

Columbia County Medical Society meets at Bloomsburg and Berwick. The meetings have been quite interesting this year under the efficient officers who have been elected. Usually luncheon meetings are held and combine business, scientific papers and good fellowship. Eleven meetings were held. This society had an increase in membership over last year.

MONTOUR COUNTY SOCIETY

Meetings of Montour County Medical Society are held at Geisinger Memorial Hospital and Danville State Hospital in Danville. They held 10 business and scientific meetings and a picnic. With the vast wealth of clinical material available at these institutions the meetings are always interesting and instructive. The stated graduate education meetings are always attended by physicians from all of central Pennsylvania. The membership is made up largely of the staff members of the two hospitals, men who, one would think, would not be much interested in state medical society activity, but it is most encouraging to see how these members are working for the advancement of all physicians throughout the state.

NORTHUMBERLAND COUNTY SOCIETY

Northumberland County Medical Society's membership embraces physicians living in Snyder County also. Meetings are held at the Mary Packer Hospital in Sunbury and the Shamokin State Hospital. The attendance and programs have been good this year. Their graduate seminars have been fine. One-half of the expense is paid out of the society treasury, the balance by the subscribing members.

SCHUYLKILL COUNTY SOCIETY

Schuylkill County Medical Society is quite active in the interests of its members. The meetings are well attended and the programs good. Their graduate seminars have become firmly established and yearly form a very splendid feature. Meetings held at night have had a very stimulating effect upon attendance. A yearly feature of interest is the meeting to which the legislators, state senators, and judges of the court are invited. These guests indicate by their remarks that they are vitally interested in the progress of medicine.

The Fourth Councilor District meeting was held at the Shamokin Valley Country Club on June 12, 1941. The meeting began with a luncheon participated in by the members, the woman's auxiliary, and guests.

After luncheon the district councilor, Dr. E. Roger Samuel, introduced Dr. George M. Simmonds, Shamokin, president of the Northumberland County Medical Society, who extended a cordial welcome from the members of the Northumberland County Society who were sponsoring this meeting.

Immediately following lunch, President Francis F. Borzell was introduced by Secretary Walter F. Donaldson, who later replied to a number of questions on society policies. Dr. Borzell gave a splendid résumé of the work of the Pennsylvania Medical Preparedness Committee. He also stressed the part that county medical societies must play in the rehabilitation of rejectees.

Dr. Charles L. Brown, Philadelphia, gave a splendid talk on "Recent Diet Trends in the Treatment of Chronic Diseases and Vitamin Deficiencies." His talk was comprehensive and interesting. The ladies were invited to stay to hear this paper on account of their interest in diet, and especially to hear an authority like Dr. Brown explain the vitamins and to clear away the haze which has grown up around this important subject.

Dr. Brown is chairman of the Committee on Graduate Education of The Medical Society of the State of Pennsylvania. He has been doing a fine piece of work on that committee and we appreciated having him come to meet our district members.

The ladies then retired to hold their own councilor district meeting.

Reports were heard from the component societies. Dr. Sydney J. Hawley, of Danville, reported for Montour County; Dr. Robert B. McCay, of Sunbury, for Northumberland County; Dr. Charles V. Hogan, of Pottsville, for Schuylkill County; Dr. Edward L. Davis, of Berwick, for Columbia County.

Dr. Palmer was introduced and spoke briefly but to the point about health legislation.

Dr. Frank W. Konzelmann, Philadelphia, chairman of the Committee on Laboratories of The Medical Society of the State of Pennsylvania, spoke on state laboratory procedures and of the functions of county medical society laboratory committtes. This marked his first appearance in the Fourth District and he was received enthusiastically by his friends in this region.

Drs. Frank R. Clark, Berwick, and Jesse Elmer Shuman, Bloomsburg, were presented with 50-year testimonials by the councilor.

The woman's auxiliaries of the Fourth Councilor District had a program, with Mrs. T. Lamar Williams presiding. She called upon Mrs. E. Roger Samuel, president of Northumberland County Woman's Auxiliary, to make the address of welcome. Responses were made by Mrs. Roy E. Nicodemus, Montour County, and Mrs. Charles V. Hogan, Schuylkill County.

Dr. Bernard J. McDevitt, of Mt. Carmel, gave a reading.

Mrs. Williams introduced Mrs. Charles C. Crouse, Greensburg, state chairman of councilors and president-elect of the Woman's Auxiliary to The Medical Society of the State of Pennsylvania. Mrs. Crouse gave a very interesting and instructive talk to the women. The members of the Northumberland County Auxiliary served as hostesses.

E. ROGER SAMUEL,
Trustee and Councilor.

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FIFTH COUNCILOR DISTRICT

(Adams, Cumberland, Dauphin, Franklin, Fulton, Lancaster, Lebanon, Perry, York Counties)

To the President and House of Delegates:

The medical societies comprising the Fifth Councilor District have all been very active and have worked hard and diligently in their efforts to keep the membership informed of the rapid strides being made in medical progress in these most strenuous and exciting times.

The woman's auxiliaries under the capable leadership of Mrs. David C. Hoff have done an excellent piece of work, and I wish to take this opportunity to express my appreciation to these loyal women for work well done. They have contributed most generously to the medical benevolence fund and I trust that this good work will be continued.

Following the custom of the past few years, and upon further suggestions from our faithful secretary of the State Society, I believe that more can be gained by reporting, county by county, the efforts and experiences of the societies in the Fifth District during the past year.

ADAMS COUNTY SOCIETY

The membership of Adams County Medical Society throughout the year has remained practically stationary. The usual monthly meetings were held and the attendance was good. Some little dissension was at first encountered among the members as to who should do the medical examining of selectees, but in a special meeting of the society the matter was amicably adjusted and the service adequately and equitably rendered. There has been no effort whatsoever to take care of the interests of the physicians absent in national defense service.

Educational releases have frequently been given to the local newspapers and instruction on the subject of appendicitis has been continued as in the past few years.

A great deal of work has been carried on with the State Health Department, especially in tuberculosis as regards case findings among grade and high school students.

CUMBERLAND COUNTY SOCIETY

Cumberland County Medical Society has lost one member by death and has enrolled 2 new members during the past year. The interests of physicians absent in national defense service have been taken care of by the secretary of the society. With his advice most of the cases have been worked out very satisfactorily on a personal or man-to-man basis.

Support has been accorded the National Physicians' Committee mainly through a substantial donation from the society.

DAUPHIN COUNTY SOCIETY

Dauphin County Medical Society has had a slight increase in membership during the past year. Ten meetings were held, the programs were excellent, and the attendance very good. The society is doing splendid work through its medical preparedness committee. It was voted to recommend that physicians caring for the patients of other physicians in military service withhold 50 per cent of the fees collected from such patients, this money to be given to the physician or the family of the physician absent in service.

The society has a well-organized speakers' bureau and has furnished quite a few medical speakers during the past year for service clubs and parent-teacher organizations.

We have had fine co-operation from the newspapers throughout the county in our educational releases.

The National Physicians' Committee has received both financial support and much publicity from our society.

There has been good co-operation between the State Medical Society committees and the similar committees of the county society.

FRANKLIN COUNTY SOCIETY

Franklin County Medical Society has a membership of 71 as of July 15, 1941, an increase of 3 over the year 1940. One affiliate member has also been added to the roll. The meetings have been very interesting and instructive and the attendance has been excellent throughout the entire year.

There are 3 boards for the medical examination of selectees, all of which are apparently functioning very smoothly.

The National Physicians' Committee for the Extension of Medical Service was voted $100 in November, 1940, by the society, and there have been a number of individual subscriptions to this cause.

The average member of this society apparently seems to be satiated with the voluminous communications, reports, and suggestions received from the many State Society committees. They seem to be in competition one with the other in trying to issue the greatest number and in striving to create the impression that every one is essential to the welfare of organized medicine. There is a growing sentiment that nationally as well as by states medicine is becoming overly organized and top-heavy.

LANCASTER COUNTY SOCIETY

Lancaster County Medical Society continues its healthy growth, having increased its membership during the year by 8. The medical boards for the examination of selectees are doing a splendid work. A good deal of effort has been expended by the members appearing as speakers before various clubs and civic organizations.

The members continue to support the National Physicians' Committee, having contributed both financially and otherwise.

LEBANON COUNTY SOCIETY

There are 51 members this year in Lebanon County Medical Society as compared to 44 last year, an increase of 7 during the year. The medical boards for examination of selectees are working hard and doing a splendid job. A few of the members have addressed lay organizations on important health and medical subjects.

The society supports the National Physicians' Committee with an annual subscription.

PERRY COUNTY SOCIETY

Perry County Medical Society has reinstated one member during the past year. The meetings were well attended and they have had some excellent speakers throughout the year. Registration board medical examinations have been conducted in an able and very efficient manner by the members.

The National Physicians' Committee has received contributions from a number of members. The society is in full accord and gladly endorses the requests received from State Society disease control committees and from the State Health Department.

YORK COUNTY SOCIETY

York County Medical Society has 158 active members, having had a decrease of 5 since July, 1940. This society through its medical preparedness committee is doing an excellent job and supplies sufficient medical assistants or examiners for the various Selective Service boards of York and York County.

No concerted attempt has been made to protect the professional interests of physicians who are absent in national defense service, it being deemed unwise to set up any specific rules or to endeavor to abide by any commitments.

The society has supplied through its public relations committee numerous medical addresses to various groups throughout the year and the instructional column entitled "Your Health" appears daily in the local morning paper in York.

The York County Society desires to play no part whatsoever with the National Physicians' Committee and has gone on record in this regard.

There have been no disappointments concerning organization work in our district during the year. We have endeavored to meet the recommendations of the State Society disease control committees and there has been a fine spirit of co-operation between them and our local committees in all regards, and particularly in connection with public health.

In my official capacity as councilor for the district in which our headquarters building is located I consider it a privilege as well as a great pleasure to visit frequently our courteous and most faithful staff members, and I wish to congratulate the staff and the efficient library force on work well done. I trust that more members of The Medical Society of the State of Pennsylvania will make use of this excellent package library as well as visit, when in Harrisburg, "230 State Street," their own building.

PARK A. DECKARD,
Trustee and Councilor.

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SIXTH COUNCILOR DISTRICT

(Blair, Centre, Clearfield, Huntingdon, Juniata, Mifflin Counties)

To the President and House of Delegates:

The Sixth Councilor District has just completed another year of satisfactory activity with the district meeting, which was held at Juniata College, Huntingdon, on June 25. The attendance was small, but those present were amply rewarded for their effort. Two very interesting scientific papers were presented. Two of the Sixth District censors were not present and failed to send reports.

The woman's auxiliary had a good delegation in attendance, and in addition to an inspiring business meeting held in the morning enjoyed a pleasant afternoon of social activities and entertainment.

Many favorable comments were heard on the new place of meeting, Juniata College, with spacious halls and recreation rooms and efficient facilities for providing an excellent dinner.

BLAIR COUNTY SOCIETY

Blair County Medical Society has lost 3 members by death in the past year and has 7 members in active military service. Eight new members have been taken into the society and several more are in prospect. The work of examining selectees for the army is going on efficiently and with satisfaction to those engaged in it. Twelve meetings were held during the year, 11 scientific meetings and one picnic.

CENTRE COUNTY SOCIETY

Centre County Medical Society has been unusually active during the year and has a present membership of 31. Five of the members are in active military service and one or two others expect to be called soon. The society has suffered no loss by death during the year. Meetings were held monthly in the Centre County Hospital at Bellefonte, except in July when a picnic and social meeting was held.

CLEARFIELD COUNTY SOCIETY

Clearfield County Medical Society has a total of 53 members in comparison with 60 last year, 3 members having been lost by death. Nine regular meetings were held during the year, 3 at Philipsburg Hospital and one at DuBois. The remaining 5 meetings were held in Clearfield. All of the meetings were scientific in character and well attended. Those held at Philipsburg Hospital combined clinical and social functions with the scientific and business sessions. There has been no complaint in the matter of examinations of selectees for the government service.

HUNTINGDON COUNTY SOCIETY

Huntingdon County Medical Society reports an active enrollment of 28 members, a gain of one since last year. There have been no deaths since the last report. Ten scientific meetings were held at the J. C. Blair Memorial Hospital, and the annual dinner, which included the ladies, was held in January. A picnic meeting was held in July. The Medical Service Association of Pennsylvania is beginning to operate with some satisfaction in the county. One member is in active military service and the examination of selectees progresses satisfactorily.

JUNIATA COUNTY SOCIETY

Juniata County Medical Society is quite active in spite of its small number of members, 8 in all. Meetings are held every 2 months throughout the year with a guest speaker for each meeting. One addition, no deaths, and no members in military service have been reported to the councilor.

Mifflin County Society

Mifflin County Medical Society is functioning very satisfactorily with interesting meetings and excellent attendance. Ten scientific meetings were held during the year at Lewistown Hospital. A picnic in August and the annual dinner including the ladies was held in January. In addition to the scientific meetings, there is a monthly meeting of the Ananias Club which is composed entirely of members of the county medical society and is purely social in its activities. The woman's auxiliary is quite active and co-operative with the medical society. The present membership of the county society is 33, a loss of one member in the past year. There have been no deaths. Two members have been called to military service.

Cloy G. Brumbaugh,*
Trustee and Councilor.

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SEVENTH COUNCILOR DISTRICT

(Cameron, Clinton, Elk, Lycoming, Potter, Tioga, Union Counties)

To the President and House of Delegates:

In a general way it can be said that the objectives of our State Medical Society are being carried on within the confines of the Seventh Councilor District in each component society, with the possible exception of Potter County, one of the outlying counties in the mountainous district of our state where the membership is small, contacts infrequent, and assemblage for meetings rather few and far between. Reports from the component societies follow with the exception of Tioga County, which has failed to comply with a report in detail although they have been meeting regularly.

Clinton County Society

Clinton County Medical Society reports a membership of 17. There were 2 deaths during the year. Ten scientific meetings were held at the Lock Haven Hospital, and one social meeting at the Fallon Hotel, Lock Haven. Two public meetings dealing with the cancer control program were held.

Elk County Society

Elk County Medical Society reports a membership of 29, which is a loss of one over last year. There have been no deaths during the year. Ten scientific meetings were held and one public meeting on the subject of cancer addressed by Dr. Lester Hollander of Pittsburgh. Three members have been called into military service.

Lycoming County Society

Lycoming County Medical Society reports a membership of 118, the same as last year. There were 2 deaths during the year. Nine scientific meetings were held, one clinical, one social, and one combined meeting. The society's bulletin has been improved in general appearance and make-up, and is issued 11 months of the year. The woman's auxiliary is active throughout the entire year. There has been established at the Williamsport Hospital a Federal Army Examination Station served by members of the Williamsport Hospital staff together with 3 psychiatrists from the Danville State Hospital. This station serves a district of 10 counties and it is planned to give about 1000 selectees per month their final examination before entering camp. Members of this society have contributed about $250 to the National Physicians' Committee for the Extension of Medical Service with the feeling that they were contributing to a most important piece of work.

Potter County Society

Potter County Medical Society reports a membership of 16, an increase of 4 members over last year. One member has entered the U. S. military service. Meetings are held irregularly. There is usually one combined dinner meeting with the woman's auxiliary, which was held this year in Coudersport on July 24, with 30 in attendance, including the councilor for the district. A fine scientific program was presented by Drs. Arthur L. Runals and David J. Maloney, of Olean, N. Y. The meeting as a whole was very creditable with a good spirit prevailing. Would that such meetings might be held more frequently!

Throughout the district the physicians generally are functioning very generously and acceptably on the various local registration boards for selectees. A creditable number of the younger members are actively in military service. In Lycoming County about 10 per cent are thus engaged. Careful consideration is being given to protect the professional interests of those members absent in national defense service, but it has not been found easy to devise a plan that will be practical and satisfactory. This was found to be true in the last war.

The State Society disease control committees are functioning. Probably the child health work in Williamsport under the supervision of Dr. J. Gibson Logue has been one of the most successful accomplishments. The pneumonia, appendicitis, and cancer control committees have all been doing creditable work in certain sections.

There is a feeling in the Lycoming County Society, supported by recent action, that some definite effort should be carried out throughout the state to acquaint and instruct each active group of hospital interns, at or near the conclusion of their term of service, in the precepts and ideals of medical ethics and economics, which should better prepare them for their relationship to the public and to their associates in the profession as they enter private practice. This has been done at the Williamsport Hospital by a representative of the Lycoming County Medical Society for the past 3 years and has been found very worth while.

The annual Seventh Councilor District meeting was held at the Lycoming Hotel, Williamsport, on May 9, 1941. Our objective of a larger attendance than previously was attained with approximately 145 present, all component county societies being represented, meaning that those from Elk and Potter counties traveled over 100 miles each way to attend. Dr. Joseph S. Lawrence, executive officer of the New York State Medical Society located in Albany, was a welcome guest. The morning meeting was addressed by Dr. David E. Hemington, Uniontown, on the subject of "Industrial Medicine in the Small Industry," and by Dr. Walter C. Alvarez of the Mayo Clinic, Rochester, Minn., on "Puzzling Types of Abdominal Pain." Both of these presentations were well received and favorably commented upon.

The luncheon was very acceptable with its associated program of entertainment by an organist, a Scottish bagpiper, and a sweet-voiced soprano soloist. The postprandial program consisted of the usual 2-minute reports from the district censors, the presentation of 50-year testimonial certificates to Drs. Oliver H.

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* Deceased Aug. 31, 1941.

Glover, Union County, R. Bruce Tule, Lycoming County, and Lewis E. Wolfe, Union County, by President Francis F. Borzell, followed by his formal address on the subject of "Medical Preparedness." Addresses by President-elect Lewis T. Buckman and by Secretary Walter F. Donaldson followed.

Mrs. J. Louis Mansuy, district councilor, introduced the dignitaries of the woman's auxiliary in attendance, including Mrs. Charles C. Crouse, Greensburg, president-elect of the State Auxiliary, and Mrs. Walter F. Donaldson, past president; also Mrs. John R. Davies, treasurer of the State Auxiliary, and Mrs. David W. Thomas of Lock Haven, treasurer of the Woman's Auxiliary to the American Medical Association.

The afternoon program was concluded by a practical and entertaining talk on the subject of "Why Women Get Nervous" by Dr. Walter C. Alvarez, of the Mayo Clinic, which was equally interesting to both the physicians and the women present.

This concluded our third joint meeting with the woman's auxiliaries of the district, which has apparently proven very popular and will probably continue to be the custom in the immediate future.

John P. Harley,
Trustee and Councilor.

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EIGHTH COUNCILOR DISTRICT

(Crawford, Erie, Forest, McKean, Mercer, Warren Counties)

To the President and House of Delegates:

The physicians of the Eighth Councilor District of The Medical Society of the State of Pennsylvania have patriotically and enthusiastically accepted the duty of examining selectees for the Selective Service. The original nucleus appointed Oct. 1, 1940, by Governor James developed quite typically a well-rounded group service through the gradual addition of physicians as well as dentists duly appointed. This volunteer service is performed most efficiently resulting in a quality army with less cost in the future for service-connected disabilities. In Erie County has been established one of the 7 trial centers in Pennsylvania for the army final examination station. It is rendering a remarkable service to the Third Corps Area, and has rapidly become efficient because of the earlier group method of examining for the registration board in Erie. The new setup provides for a radius of 75 miles south and west. Formerly such selectees went to the Pittsburgh station for the final examination. The permanent establishment of the newer examining centers seems assured.

With the development of the nation-wide defense program the problems of the Department of Public Assistance have been minimized. Comparatively few are now on relief rolls due to expansion of employment. Also there has been an increase in private practice which tends to prove that increased medical care and service follow increased employment. Physicians have become more interested in seeking opportunities for research and postgraduate study.

The American Medical Association questionnaire on medical preparedness at first received little attention, but the subsequent action by the State Society's medical preparedness committee resulted in an almost perfect score. The questionnaire later sent out by the State Society seemed like a duplication of the first questionnaire.

Little has been heard of the Medical Service Association of Pennsylvania in this councilor district. The Farm Security Administration is firmly established in Crawford County and efforts are being made to establish this form of medical service in Erie and other counties. The National Youth Administration health service at this writing is apparently having difficulty in organizing.

Crawford County Society

Crawford County Medical Society has had a successful year. Two of its 62 members are in army or navy service. The report on the Farm Security Administration is gratifying and it seems to serve a very definite purpose. The examination of selectees is now being carried on successfully by a group in the City Hospital in Meadville. During the past year this society saw the organizing of its woman's auxiliary, the youngest but one of the most active in the district. Even a bowling league has been started.

Erie County Society

July 15 found 10 members of Erie County Medical Society in the army or navy service. Several others are awaiting orders. In Erie County the draftees are examined in the physician's private office, but in the city of Erie this examining has been placed under a group of general practitioners and specialists. At first St. Vincent's Hospital was the scene of this weekly examination of a hundred or more boys; now this setup has been transferred to the State Armory, where the new federal examining board functions. The state Selective Service group examining has been smooth and efficient, making it easy for the local county society to fit into the federal setup of the Third Corps Area out of Baltimore. An x-ray outfit was set up in the armory for this new station.

The Erie County Society has run smoothly. The Farm Security Administration and the National Youth Administration are looking for berths in Erie under the supervision of the local society. The increase in proration of the allotment for payment of Department of Public Assistance bills has proven satisfactory. Little has been heard of the Medical Service Association of Pennsylvania, while the group hospital insurance enterprise appears to be flourishing. The woman's auxiliary continues to be, in all truth, a helpful aid to the society.

McKean County Society

McKean County Medical Society is disturbed over the outcome of the proposed legislative changes in the hospital setup as to interns and residents. Seven members are in the army or navy service at this time. The councilor was surprised over the agitation aroused by the inclusion in his 1940 report of a rumor for which he is sorry and even apologetic, if necessary.

Mercer County Society

Next to Erie and Warren, Mercer County Medical Society had the largest enrollment at the 1941 councilor district meeting. Always a leading and active society with a tiptop auxiliary, this group reports a successful year. Of 90 members, there are 4 in the service of Uncle Sam. They have asked for discussion of a situation in which a doctor of medicine connected with an osteopathic hospital seeks membership. Inquiry made since their meeting indicates that the American Medical Association House of Delegates is on record stating, "There hardly can be a voluntary relationship between a doctor of medicine and a cultist which is ethical in character."

Warren County Society

Members of the Warren County Medical Society delivered 50 instructive addresses to lay and professional audiences during the past year. Of the 51 members, 4 are already in the army medical service. Warren reports no difficulties and had the second largest attendance at the 1941 councilor district meeting. A live society with a more than live auxiliary.

The annual meeting of the Eighth Councilor District of The Medical Society of the State of Pennsylvania (fully reported in the August Pennsylvania Medical Journal) was held June 19, 1941, aboard the *S. S. South American* out of Erie, with 275 aboard and Councilor Norbert D. Gannon presiding. This was one of the finest meetings and outings ever held by a councilor district.

The meeting was opened with an address of welcome by Dr. Merle Russell, of Erie, president of the Erie County Medical Society, the host society.

The district censors or their representatives gave county society reports and the following were read: Crawford County — Dr. John M. Kinnunen; Erie County—Dr. Orel N. Chaffee; McKean County—Dr. Francis DeCaria; Mercer County—Dr. James A. Biggins; Warren County—Dr. Hilding A. Bengs.

The official family of the State Society was represented by President Francis F. Borzell, of Philadelphia, and Secretary Walter F. Donaldson, of Pittsburgh. Dr. Borzell outlined and detailed the activities of the State Society in the medical preparedness program.

He mentioned the inferences thrust at the physicians by unfriendly organizations attempting to place the blame for the large number of selectee registration board rejections on the medical profession. He asked for an analysis of these rejections and a committee from each county medical society to study and offer a program for the rehabilitation of the interested "rejectees" in each county.

Dr. Borzell presented Drs. Clayton C. Flatt, of Kinzua, and Ernest J. Kelley, of Chandlers Valley, both in Warren County, with framed certificates from our State Society commemorating their 50 years of practice and community service.

Secretary Donaldson complimented the councilor on the good meeting held aboard such a palatial vessel. It was the seventh 1941 councilor district meeting he had attended and he was impressed by the great interest manifested by the presence on board of so many of the younger physicians of the eighth and other councilor districts.

Referring to the recently concluded trial of the American Medical Association, the secretary stated that no matter what the ultimate decision may be in this case it is the responsibility of the individual physician to continue to render such service in his every professional capacity as to convince his fellow citizens that the true professional spirit always rises above calumny or misunderstanding.

For the service that the physicians of the councilor district rendered to the State Selective Service, Lt. Col. Edgar S. Everhart, of Harrisburg, medical officer of the State Selective Service, brought thanks and praise from its director, William Mather Lewis. He thanked all medical examiners for a fine and patriotic service well done. He complimented Erie on its original setup and also on its successful federal setup.

The feature speaker of the day was Dr. Daniel L. Borden, of Washington, D. C., president of the Medical Society of the District of Columbia. He brought greetings from his society and then gave intimate observations based on his daily attendance at the American Medical Association trial in Washington. He spoke of the varying testimonies, the characteristics of the attorneys, the abuses and travesties in many phases of the presentation of the case. He told of the verdict and the possible future action by the courts. An address every physician should hear if he seeks the "low-down" in the complete history of the trial, it was a revelation in many respects.

The meeting was followed by dinner, then "a show" by the members of the crew, and later there was dancing with a buffet lunch at midnight. After 12 delightful and profitable hours on Lake Erie, the vessel docked and the 1941 meeting was ended.

The Third Corps Area of the U. S. Army was represented by Col. Don G. Hildrup, Surgeon General's Office, Baltimore, and Col. John B. Richardson, of the Adjutant General's Office, Baltimore, also, Capt. Charles H. Bloom, of Altoona, evaluator for the Federal Army Examining Station.

Norbert D. Gannon,
Trustee and Councilor.

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NINTH COUNCILOR DISTRCT

(Armstrong, Butler, Clarion, Indiana, Jefferson, Venango Counties)

To the President and House of Delegates:

The Ninth Councilor District with its 6 component societies whose memberships range in number from 24 to 64, totaling 298 members, no doubt offers organizational problems which may require differing solutions from districts with possibly fewer counties and certainly more members.

When it is remembered that the 349 physicians in the district, 25 of whom are absent in military or naval service, must serve a total population of 389,564, scattered over a total of 4200 square miles, it may become apparent that at certain seasons of the year when professional work is heavy and not all of the 4031 miles of roads in the district are in the best of condition there may come periods when physicians have very little time to give to county and state medical society affairs.

Fortunately, there is always a nucleus of the membership who are faithful in spite of seasonal or other drains upon their energy, and these hold together the various county medical organizations until such time as the more open seasons again increase the attendance and the interest in programs.

If we could be assured that more of the younger physicians would more promptly and earlier in their professional careers join the nucleus just referred to in each county society, we might feel more optimistic about the continuation of medical society growth and influence. It is to these younger physicians that not only medical societies but the people of each county must look for consistently improving health and medical service.

At the conclusion of the first year of my service it is pleasing to be able to present evidence of the "state" of each component society in the Ninth Councilor District. More specific comments will be postponed until another year has passed.

ARMSTRONG COUNTY SOCIETY

Since the 1940 councilor district meeting, the membership of Armstrong County Medical Society has increased by one member and is now 50. One member was lost by death during the year, Dr. William J. Bierer. He served as president in 1931. It is found most practical and satisfactory to combine business and scientific meetings. Nine such meetings have been held. At 7 meetings guest speakers presented the scientific program, while members functioned at the others. All presentatitons have been interesting and informative, but it is reported with regret that attendance has been just fair, the younger members being the more delinquent. All meetings held in Kittanning are preceded by a dinner, in which the woman's auxiliary to the society joins.

Five of the society's members, Drs. Henry W. Fraley, S. Thomas Ilyas, John S. McCafferty, James D. Stratton, and John W. Welsh, first lieutenants, Medical Reserve Corps, are on active duty as medical officers with the armed forces of the nation. Major T. Craig McKee has not been ordered to active duty.

BUTLER COUNTY SOCIETY

Butler County Medical Society had 67 members in 1940. In 1941 it has 64 members. Three members were lost by death. Eleven meetings were held last year, 9 scientific and 2 social; there were none to which the public was invited. Three members gave instructional addresses at public meetings. Five of the members are in military service.

CLARION COUNTY SOCIETY

Clarion County Medical Society had 25 members in 1940; in 1941 it has 24 members. One member was transferred to Venango County Society; the other was suspended for nonpayment of dues. This society meets quarterly, holding combined scientific and social meetings. Two special meetings were held to which the public was invited. Meetings are usually held in Clarion.

INDIANA COUNTY SOCIETY

In 1940 Indiana County Medical Society had 53 members; in 1941 it has 57 active members and one affiliate member. One member has died since the last councilor district meeting, Dr. Jason W. Carson, of Indiana. Ten meetings were held by the society, 8 scientific and 2 social. All meetings are held at Indiana. The county society members take their turn in examining the selectees. The Indiana Hospital is co-operating in affording facilities for the examinations and assisting in the laboratory work. This method works well and divides the work equitably.

JEFFERSON COUNTY SOCIETY

Jefferson County Medical Society has an active membership of 47 in comparison with 46 last year. One member is now taking a year of postgraduate work. There are 3 members, Drs. Robert M. Jacobson, Jack D. Sedwick, and Robert L. Shaffer, in the service of our country. Since the last councilor district meeting there have been no deaths. Meetings are held monthly at a place designated by popular vote, but are dispensed with during June, July, and August. The meetings in a sense are both scientific and social. The scientific program is conducted by an invited guest speaker on subjects of interest to both general practitioners and those engaged in specialties.

VENANGO COUNTY SOCIETY

Venango County Medical Society has 56 members, an increase of 3 over last year. There were 2 deaths, Drs. Thomas A. Irwin, and Alexander M. Brown. The society meets the third Friday of each month except during June, July, and August. The September meeting with an expanded program and a large attendance is held at the Venango Country Club. Other meetings alternate between Oil City and Franklin.

Drs. William F. Brehm, Thaddeus S. Gabreski, Garrett C. McCandless, and Bernard J. Owczykowski have entered the U. S. army medical service.

Nine meetings are held during the year, 8 clinical and one social. Seven of the programs have been addressed by local members with satisfactory results. Discussion of these papers is participated in by more members than when a visiting physician is the speaker.

The 1941 meeting of the Ninth Councilor District was held on June 26 at the Punxsutawney Country Club.

Dr. Frank A. Lorenzo, newly elected, serving his first year as trustee and councilor for the Ninth District, presided. Dr. Sylvester S. Hamilton, Jr., president of the Jefferson County Medical Society, was introduced as chairman of the scientific program. Abstracts will be published in the October PENNSYLVANIA MEDICAL JOURNAL.

The first speaker, Dr. Sergei V. Algin, of Indiana, member of the State Society Committee on Nutrition, discussed the subject of vitamins.

The next speaker, Dr. Julius M. Rogoff, professor of endrocinology at the University of Pittsburgh, enlightened the assembly with his presentation of "Endocrine Aspects of Hypertension."

The next subject of vital interest was the discussion by Dr. Ralph Lynch, of Mercy Hospital, Pittsburgh, on "Prothrombin and Vitamin K in the Jaundiced Patient."

The next speaker, Dr. Edward J. McCague, also of Mercy Hospital, dwelt upon a recognized subject of vital interest to the general practitioner but truly considered a specialty. His presentation was entitled "Genito-urinary Disease."

The program was then concluded by Dr. John P. Griffith, also of Mercy Hospital, Pittsburgh, who chose as his subject "Cholecystitis."

This very instructive program was followed by 20 minutes' discussion, during which several members of the assembly asked questions pertinent to the presentations. Sufficient time was given the essayists to elaborate on their replies to enlighten points pertinent to the program.

A 30-minute social period followed, after which a delectable chicken luncheon prepared by the Woman's Auxiliary to the Jefferson County Medical Society was enjoyed.

The program was resumed at 2 p. m., with Councilor Lorenzo presiding. Three-minute reports of county society activities from district censors were then heard in the following order: Drs. Thomas N. McKee, Armstrong County Society; Harry P. St. Clair, Butler County; Byron P. Walker, Clarion County; Joseph C. Lee, Indiana County; Hollister W. Lyon, Jefferson County; and Paul R. Cunningham, Venango County, Dr. Lorenzo then presented the 50-year testimonial certificates from the State Medical Society prepared for Drs. John F. Davis, Venango County, who received his "in absentia" through Dr. Ford M. Summerville; Samuel G. Foster, Venango County; and Frederick C. Monks, Armstrong County.

Following this, Dr. Francis F. Borzell, president of the State Society, gave an interesting discussion of medical preparedness for defense, stressing county medical society responsibility in the rehabilitation of each county's selective board "rejectees." Dr. Walter F. Donaldson, secretary of the State Society, next gave an enlightening report on health legislation and organizational problems, emphasizing the importance of contact maintained between each county medical society and the representatives in the legislature, also the rôle and mutual responsibility of each component society to contact frequently nearby societies through the medium of their district councilor.

The councilor thanked the woman's auxiliary for the excellent luncheon and co-operation given by all the members in making the meeting a success. Mrs. Guy M. Musser, district councilor of the woman's auxiliaries of the Ninth Councilor District, then gave an appropriate response to Councilor Lorenzo's acknowledgment of support given. A motion made by Dr. Guy M. Musser, seconded by Dr. Ernest P. Gigliotti, both of Punxsutawney, having been adopted, the assembly arose, thus giving unanimous voice in expression of respect and loss through the passing of members called to the "great beyond" during the past year and also in poignant memory of Dr. John J. Shaw, State Secretary of Health, so recently and unexpectedly deceased.

Frank A. Lorenzo,
Trustee and Councilor.

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TENTH COUNCILOR DISTRICT

(Allegheny, Beaver, Lawrence, Westmoreland Counties)

To the President and the House of Delegates:

In the opinion of the councilor the outstanding accomplishment during the past year in this district was the reorganization and increased activities of the Committee on Appendicitis Mortality under the able direction of Dr. John P. Griffith. Dr. Griffith not only accepted the chairmanship of this committee in Allegheny County but in his capacity representing the State Medical Society's Commission on Acute Appendicitis Mortality supervised the work in the other 3 counties of the district. He worked ardently in arranging instructional campaigns for the public, and he himself, or one of his chosen representatives mentioned under their respective county society reports, appeared before 42 high school assemblies addressing 55,000 students and distributing the "warning stickers" regarding the great dangers in taking laxatives and of delay in seeking medical care in the presence of abdominal pain.

In his previous report your councilor discussed the possibility of the formation of an executive committee within the Board of Trustees to expedite the business of that body (see chairman's report). This committee was organized and had its first meeting on Jan. 7 with 4 additional meetings since that time—these in addition to the regular and special meetings of the Board of Trustees. In a manner this executive committee answers the need previously discussed of a possible division of the duties of trustees and councilors, but your councilor respectfully directs your attention to the potential benefits of the previously (1940 report) discussed organizational survey.

The question of the disposition of the medical defense fund for our members and the possible conversion of a portion of this medical defense fund into a reserve for a mutually supported pension plan for employees (also discussed in the 1940 councilor report) is again brought to the attention of the House of Delegates.

The question of industrial health, so vital to the defense projects at this time, is very much in the forefront in discussions at the meetings of all county societies.

In the vexatious problem of medical relief there has always prevailed a spirit of co-operation among the members of the Tenth Councilor District with the plans of the State Society and the ideals and objectives of its officers. It is gratifying to report that this patient loyalty has borne fruit in the more equitable adjustment of professional fees which began on Mar. 1, 1941.

Many members in the Tenth District are serving with distinction on the various registration boards for selectees. The work has been heavy, the complaints negligible. Final rejection of some selectees approved by local boards caused considerable confusion for a time, but this situation has been corrected. The fine patriotic contribution of these draft board physicians has earned untold good will for the profession as a whole. They deserve a wholehearted vote of thanks, and I desire to congratulate them on their good work.

Approximately 104 members have been ordered to active military service in the Tenth Councilor District —Allegheny County, 83; Beaver County, 7; Lawrence County, 3; Westmoreland County, 11.

National Youth Administration

A problem which has originated during the year is that relating to the examination of enrollees of the National Youth Administration. The executive committee of the Board of Trustees after a careful study of this problem has arrived at these conclusions:

1. That the medical examination of NYA enrollees be made in their home county by a local examining board.
2. That enrollees from sparsely settled counties may be examined in neighboring counties with the permission of the county medical society concerned.
3. That a committee to be known as the State Advisory Committee to the National Youth Administration should be created.

These recommendations made to the Board of Trustees were approved by mail vote, and it will not be long until the members of the Tenth Councilor District begin to hear a great deal more about the medical examination of NYA enrollees. May I take this opportunity to ask for the same loyal co-operation in this work by the members of the Tenth Councilor District as they have so often exhibited in the past.

(The above conclusions properly belong in the report of the chairman of the Board of Trustees, but the action was too late for its inclusion.)

Councilor Commission Meeting

On May 1 a Tenth Councilor District Commission meeting was held in the Hotel William Penn, Pittsburgh. This meeting was devoted to the various aspects of medical work in connection with examination of selectees, medical service in the armed forces, and with the maintenance of adequate medical service at home. The after-luncheon program was devoted to pending health legislation.

Councilor District Meeting

On Apr. 17 the Beaver County Medical Society was host for the annual meeting of the Tenth Councilor

District. An all-day program under the leadership of Drs. George P. Muller and John T. Eads, of Philadelphia, was presented on the subjects, "The Medical Management of Chronic Gallbladder Disease" and "The Surgical Indications in Biliary Tract Disease." Ten members who had completed 50 years in the practice of medicine were honor guests at this meeting: Drs. James D. Heard, Andrew Hunter, William H. Kirk, Alvin K. Lyon, Samuel C. Milligan, Edward L. Neff, Albert D. Price, Elmer E. Wible, William M. Woodward, members of Allegheny County Medical Society, and Dr. Emmett S. Burns, of Beaver County Medical Society.

Under the able leadership of Mrs. John H. Gemmell, district councilor, the woman's auxiliaries of the district held their annual meeting convening at 10 a.m. and continuing until late in the afternoon. The program included addresses by Mrs. Charles C. Crouse, president-elect, Woman's Auxiliary to The Medical Society of the State of Pennsylvania, county medical society presidents, and State Society officers.

Allegheny County Society

A syphilis control program was inaugurated in August, 1940, in the city of Pittsburgh. The program is under the joint auspices of the Allegheny County Medical Society, the Pittsburgh Department of Health, and the General Health Council. A second year of the program is assured.

All Pittsburgh newspapers published health sections during the year, the material in all cases having been submitted to the society for approval.

The annual meeting of this society was held on May 1 with 3 out-of-town speakers. There was a very large attendance at these sessions. In the evening the chief speaker was Dr. E. J. G. Beardsley, clinical professor of medicine, Jefferson Medical College. He was introduced by President Francis F. Borzell of The Medical Society of the State of Pennsylvania.

Scientific meetings were held each month from September to April, inclusive; the May meeting is the annual meeting. Attendance on the average was rather disappointing despite the double attraction at each meeting of scientific programs with related scientific exhibits. The finances of the society are in excellent condition.

The present apparently satisfactory solution of the medical service available in recent years to Public Assistance recipients throughout the state undoubtedly owes a considerable proportion of its solution to the fine yet determined co-operation between the Advisory Committee of the Allegheny County Medical Society (Dr. Charles C. Rinard, chairman), the Public Assistance Board of Allegheny County (Mr. George P. Mills, executive director), and the similar State Board of Public Assistance (Messrs. Russell and Brindle).

The chairman for this councilor district representing the Commission on Acute Appendicitis Mortality, Dr. John P. Griffith, reports that the city of Pittsburgh required 25 lectures to cover the junior and senior high schools. In some of the schools it was necessary to give 3 separate talks because of the number of students present. The total number of students attending these lectures was 26,192 in 12 different schools. We estimate that about 65 hours were spent lecturing to these students in the city of Pittsburgh. Drs. Griffith and Harry E. Feather gave the talks and the younger men gave their assistance in the county schools.

In Allegheny County 30 schools with a total number of approximately 18,310 students were canvassed. The men who participated in the work of lecturing to these students are Drs. Griffith, Feather, John S. Frank, Daniel P. Greenlee, Alfred W. Crozier, Jr., Thomas J. Madigan, James V. Scott, J. Everett McClenahan, Harold A. Kipp, Philip A. Faix, John P. Henry, and John E. Holt. About 75 hours were spent lecturing in the county schools.

While not at the present time able to give a definite report on the number of antiperitonitis blood serum donor clinics, Dr. Griffith assures the councilor that interest will be stimulated in this phase of the campaign in the near future.

Beaver County Society

This society held 9 scientific meetings which 45 per cent of the members attended regularly. Guest speakers took part in many of the programs. One meeting was held as usual at the Beaver County Sanatorium, with the woman's auxiliary holding a joint meeting followed by dinner. In October the society held an interesting meeting at the Beaver County Home, followed by dinner. The annual meeting was held in December, at which time the new officers for 1941 were elected.

The number of Public Assistance recipients has been markedly reduced in the past year due to the current industrial improvement, and all seem satisfied with the system as it now exists.

Drs. Harry W. Bernhardy, James G. Weyand, Philip F. Martsolf, and Loyal P. Atwell lectured and distributed "warning stickers" in connection with our society's Commission on Acute Appendicitis Mortality. Nine high schools, the total number in the county, were canvassed; 5000 students were addressed.

Lawrence County Society

The Lawrence County Medical Society has maintained its usual good record for frequent scientific meetings and its admirable record for response to requests for co-operation received from officers and committee representatives of the State Society. In fact, it seems to be in advance of many component societies in its response to requests for co-operation with the recently introduced and approved National Youth Administration (NYA) health program in Pennsylvania.

This society is one of the few remaining societies that maintain a milk commission and support a local large certified dairy supervised constantly by a physician, a bacteriologist, who is a physician, making daily inspections and bacterial counts, as well as the full-time service of a doctor of veterinary medicine.

In connection with the society's instructional program on acute appendicitis mortality, Dr. Paul H. Wilson has had a great deal of difficulty planning the high school talks in this county. This difficulty was partly due to reluctance on the part of the school supervisors to hold student assemblages due to a widespread grippe infection. Dr. Wilson expects to finish his district by the end of 1941.

Westmoreland County Society

This society shows a healthy increase in membership and continues in spite of the great area of the county—1039 square miles—(Allegheny and Lawrence Counties together cover a total of 1085 square miles) to exert its influence over practicing physicians and the population alike through the procedure of holding its meetings at more than one point in the county, viz., Monessen, New Kensington, and Latrobe. One meeting of the society is held each year at the Torrance State Hospital, Torrance.

The annual meeting of the society was held in New Kensington on Thursday, May 8, and was well attended, but due to an unfortunate conflict of dates your councilor was unable to be present. The guest instructors were clinicians from the Cleveland Clinic. The clinic was prepared by the staff of the Citizens General Hospital. The featured speaker at the evening dinner was a popular Philadelphia humorist.

Dr. Charles C. Crouse, chairman of the Appendicitis Mortality Committee of the Westmoreland County Medical Society, states that he and his associates have covered about 60 per cent of the junior and senior high schools in the county giving lectures, etc. (This responsibility seems endless since freshman classes in high school are an annual product of our system of education.) Eight high schools in this county were canvassed —approximately 4200 students. The following physicians participated in these lectures: Drs. Crouse, Jack H. Hamill, Samuel M. Sparks, Thomas B. Herron, William J. Potts, Oscar B. Snyder, and Richard C. Cole.

Again, as in the past, your councilor is deeply indebted to Dr. James L. Whitehill, executive assistant to the councilor, for his cordial co-operation in the many calls for his able assistance in the activities of the district.

The members of the Tenth Councilor District have been most co-operative in their response to requests or suggestions from the councilor. During the past year each society has been called upon many times for support in the interests of both public health and national defense, and the response has always been prompt and willing.

Robert L. Anderson,
Trustee and Councilor.

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ELEVENTH COUNCILOR DISTRICT

(Bedford, Cambria, Fayette, Greene, Somerset, Washington Counties)

To the President and House of Delegates:

The year's record of the Eleventh Councilor District is such as to inspire increasing confidence as time goes on. Each society undertakes the work at hand and, in spite of the social, political, and economic changes, remains on a sound professional basis.

The longer one serves as a councilor the more he appreciates the value of grouping component counties with their varying activities into councilor districts, bringing to each and every member appropriate avenues of instruction and legislative information.

Little or no complaint regarding the Public Assistance situation has been heard since March, 1941. This, as I see it, should be most pleasing to the sick people who remain on relief.

In the Eleventh District very little has been heard, excepting explanation, regarding the voluntary insurance offered by the Medical Service Association of Pennsylvania. We look forward to much good from it in the future.

The National Youth Administration health program has been discussed and the formation of the proper committees advised. At the present writing only Cambria County Society has reported any movement toward adoption.

The officers of our State Society have been faithful and effective in giving advice concerning matters which required experience.

Disease control committees have been equally effective.

I continue to believe that we in our district should continue contributions to the valued work of the National Physicians' Committee.

The woman's auxiliaries to the county medical societies throughout our district continue their fine support. Mrs. James H. Corwin, Washington, councilor for the Eleventh District, has developed good cooperation in health instruction programs. We are grateful to her.

We have attempted to give time and effort toward accomplishment in meeting the responsibilities laid on our district and it is a pleasure to thank each and every one who has helped in the work of the past year.

Dr. William B. Templin, president of the Cambria County Medical Society, presided at the morning session of the 1941 Eleventh Councilor District meeting held July 10, at the Sunnehanna Country Club, Johnstown. The day was beautiful and the attendance large.

Dr. Leo H. Criep spoke simply, directly, and helpfully on "The Management of Allergic Conditions of the Respiratory Tract." Dr. Dudley A. Irwin, of the Banting Institute, University of Toronto, Canada, spoke on "Silicosis." This proved to be a thrilling report on a painstaking and prolonged laboratory and industrial study series in search of adequate means of controlling silicosis in quarry workers. That it was the most outstanding presentation of the subject ever heard was the opinion expressed by many present, including prominent industrial physicians of the western Pennsylvania district. These included Drs. D. A. McGregor, T. Lyle Hazlett, William S. Wheeling, and J. W. G. Hannon.

At luncheon a 50-year testimonial certificate from the State Society was presented to Dr. Louis P. McCormick, of Connellsville.

The customary reports of county society activities were presented, after which President Francis F. Borzell talked for 20 minutes on medical preparedness and rehabilitation of rejectees.

President-elect Lewis T. Buckman, of Wilkes-Barre, introduced by Secretary Walter F. Donaldson, gave a talk which was listened to very closely and fully appreciated by everyone present for its remarkable grasp of threatening political conditions which demand alertness and unity of support by physicians.

Dr. C. L. Palmer then addressed the group on the progress that had been made during the 1941 legislative session.

The woman's auxiliaries of the district held their meeting at the same place, Mrs. James H. Corwin, district councilor, presiding. Reports were heard from 6 county auxiliaries. Questions of interest were asked and answered and messages were given by Drs. Borzell and Buckman, and President-elect Mrs. Charles C. Crouse of the State Auxiliary. After luncheon the ladies devoted the afternoon to a social time and bridge.

Each successive annual meeting has seemed to prove the best; this I can truthfully say.

Bedford County Society

Bedford County Medical Society has continued its activity as in past years. Scientific meetings were held each month throughout the year with good programs. There are 14 active members in good standing and one affiliate member. Two members are deceased — Drs. Abram M. Miller and

Walter F. Enfield, father of Dr. George S. Enfield of Bedford, whose paternal grandfather formerly practiced in Bedford. Dr. Enfield was a great inspiration in the district.

We are proud that a woman's auxiliary exists in this district where so few members are available.

Six members of the society are active in the examination of selectees for the local registration boards. No action has been taken concerning protection of the interests of physicians who are in national defense service. To date such need has not presented itself in Bedford County.

Little has been done in the way of instruction of the public.

Some support has been given to the work of the National Physicians' Committee.

Cambria County Society

Cambria County Medical Society was most active as usual. Its 10 scientific meetings were of the highest type. In addition, 2 social meetings and one clinical meeting were held. Their programs are well balanced for the instruction of members whether in special or general practice. The attendance is exceptionally good. The membership for the past year was 175; there were 6 new members, 2 deaths, and one transfer.

Registration board medical examination of selectees has progressed satisfactorily. No plan has been formulated to protect the professional interests of members absent in national defense service.

Radio programs have been generously staffed as a means of public instruction. This society should be complimented for its contribution of $100 to the work of the National Physicians' Committee.

No lack of full organizational support has been noted or reported regarding this society.

Fayette County Society

The membership of Fayette County Medical Society at 121 is one less than in 1940. During the year the society held 8 scientific meetings, one social and one clinical. These meetings have all been of high standing, and it was my pleasure to attend a magnificent clinical meeting held during the year. One combined meeting was held with another society. The meetings as a rule are held in Uniontown Hospital. Industrial medicine has been amply discussed.

Examinations of selectees by their registration board have been carried on quite successfully. The same question has been raised here as elsewhere as to whether or not they should feel any embarrassment when a draftee examined by the local board is turned down by the Army Board. I find that many instances of this kind have occurred, and believe that no humiliation should be felt at all, but that the examiners should continue to do their duty as they see it.

The interests of the physicians absent in national defense service are being cared for by individual physicians who are helping to maintain such practices under a mutual agreement. Many diversified opinions have been expressed as to how equity may best be maintained.

Little action has been taken by this society in regard to a speakers' bureau. No support is accorded the National Physicians' Committee. The reason given is "purpose not clearly shown." Could this be considered confusing inasmuch as many societies support this national committee from the angle of reaching the public through an outside source as well as from the local point of view?

Candid, constructive comments on organizational successes and disappointments in the Eleventh District are made solely with the hope of making greater strides in the advancement of health and the public's understanding of our purposes as an organized profession.

The woman's auxiliary like many auxiliaries continues to function well, though often under difficulties.

Greene County Society

Greene County Medical Society is progressing, much to the councilor's satisfaction, particularly in its scientific activities. They have 28 members in good standing, the same as last year. One member died; 3 are in military service. Eight meetings with scientific programs were held last year.

This county has 2 boards appointed to take care of the medical examinations of selectees. They believe that former patients will return to the physicians now in service upon their return to private practice.

Public instruction was provided freely by members who spoke in the schools of the county. The National Physicians' Committee has the full support of this society. They are rather reticent in making any particular comments on the society's successes or disappointments during the past year.

The woman's auxiliary has been quite active and has given full support when requested.

Somerset County Society

I particularly like the activity of Somerset County Medical Society in its medical program and always feel well repaid when making my visit during a meeting. They have increased the number of meetings from 6 to 12, which has brought about improvement; there are 10 scientific and 2 social meetings. They have 38 members—a loss of 2 from last year. Society meetings were held at 3 different places in the county. There were 2 deaths during the past year.

This society annually extends an invitation to neighboring county societies to join them in holding a combined meeting. I have always felt kindly towards this movement.

Five members of this society are in the nation's military service. The examination of selectees has been carried out methodically and there have been no delays or difficulties in meeting the requirements of registration boards.

This society has conformed when possible to the requests of the State Society. No public instruction was given by the society during the year. The woman's auxiliary of this county has as usual been co-operative.

Washington County Society

Washington County Medical Society has a total membership in 1941 of 144 members. There were 138 the previous year. There are 9 members (see July Pennsylvania Medical Journal) in military service. There were 2 deaths during the year. Ten meetings were held with dinner followed by scientific programs, one in McIlvaine Hall, Washington and Jefferson College, with the Phi Sigma Fraternity. On June 11, 1941, a meeting was held at the Hillsview Sanitarium with Dr. Russell L. Haden, of the Cleveland Clinic, as speaker, his subject being "Gout." On May 14, 1941, a seminar (see August Pennsylvania Medical Journal) was held in the ballroom of the George Washington Hotel, conducted by 4 speakers from the University of Pennsylvania Postgraduate Medical School.

The Committee on Medical Preparedness functioned quite well, making a complete county survey.

This society was most progressive in all work during the past year.

The society divided the county into 8 areas to do the examining with the registration boards. Examiners were appointed to divide this work. Their work is done promptly and with marked precision. Nothing has been done to protect the interests of the men absent in national service, except rescinding their dues.

Little public instruction was given during the past year, except by members of the pneumonia, diabetes, and syphilis control committees.

No medical society contribution was given to the National Physicians' Committee, but individual subscriptions were made.

The candid comments given were based purely on the extensive amount of work which the secretary must do without any particular compensation. This seems to be the most active office and should command a satisfactory compensation.

The woman's auxiliary under the councilorship of Mrs. James H. Corwin has been quite active throughout the year. A series of 4 plays were given by the Pittsburgh Playhouse Association under the sponsorship of the woman's auxiliary of the county medical society. I wish to commend Mrs. Corwin for the very efficient manner in which she has handled her work this year.

Laurrie D. Sargent,
Trustee and Councilor.

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TWELFTH COUNCILOR DISTRICT

(Bradford, Luzerne, Sullivan, Susquehanna, and Wyoming Counties)

To the President and House of Delegates:

The Twelfth Councilor District regrets the loss of one of its component societies (Carbon) during the past year. The 1940 House of Delegates in true democratic style approved the constitutional amendment to remove Carbon County from the Twelfth District and return it to the Third District. The wisdom of the procedure was questioned by the councilor of the Twelfth District in his letter to the president and the 1940 House of Delegates, and the reasons for his objections were again brought to the attention of the House when the amendment was presented for vote, yet the transfer was authorized and made. Although we are still not convinced, we bow to the will of the majority and heartily wish the members of the Carbon County Medical Society happy and congenial affiliations in their new yet old and more familiar environment.

The activities of the Twelfth District during the year have been commendable in most instances, for we must ever bear in mind that our profession is made up of individualists, and to have them see eye to eye with an organization is by its very nature a difficult problem.

The Department of Public Assistance with all its objectionable prorations and insufficient allocations for professional services rendered may have been a blessing in disguise—perhaps to pave the way for the entry of the Medical Service Association of Pennsylvania to sell without profit insured medical service to low-income groups. Most physicians in the district believe firmly in the possibilities of the Medical Service Association of Pennsylvania. Those with hospital affiliations have seen the phenomenal growth of the Blue Cross Plan of hospital insurance here in northeastern Pennsylvania, and many of them who were antagonistic or reactionary in the beginning are now convinced of its merits and can readily foresee similar possibilities for the M. S. A. P.

The medical examination of selectees by the local registration boards has been an outstanding patriotic achievement for organized medicine. This work has in the main been assigned to busy physicians who regarded it as a patriotic contribution and by so doing have earned more good-will for the profession than can ever be estimated. In the beginning the examiner's ordeal was quite difficult for many, but as they became familiar with the details they were able to systematize and arrange their setups so that many of them are now fascinated with what was originally a hardship.

An induction center was established in Wilkes-Barre serving 18 counties of northeastern and central Pennsylvania with Major G. N. Fluegel, a member of the Luzerne County Medical Society, in charge. Major Fluegel's answer to the question as to what co-operation he received from the physicians who were assigned to him to examine in the induction center was "marvelous." He was delighted with the morale of the profession when outstanding specialists would spend 8 hours a day for an honorarium of $15 and each and every one responded to his call regardless of the personal sacrifice involved.

Since the 10-day deferment order went into effect, induction centers have been set up in Williamsport and Scranton, which eases the tension of the Wilkes-Barre center.

Throughout all counties in the district, medical preparedness committees have been formed and each county medical society has made plans to protect the professional interests of the physicians of the county absent in national defense service.

The woman's auxiliaries throughout the district under the leadership of Mrs. Robert S. Woehrle have been active and have sponsored many instructive and profitable meetings for their own and other groups. To the members of the auxiliaries of the Twelfth District I again wish to express my sincere appreciation for their help and co-operation and I especially wish to thank and commend Mrs. Woehrle for her untiring efforts in the auxiliary organization.

The 1941 councilor district meeting was held at Scranton Country Club on June 17. This was a combined meeting with the Third Councilor District and the woman's auxiliaries of both districts.

The program was excellent, and as a detailed account of the meeting will be published in the Pennsylvania Medical Journal, my comments will be brief.

Splendid instructional talks by Dr. Herbert B. Gibby on "The Use of Lyophilized Plasma in Peritonitis"; "The Use and Abuse of the Sulfonamides in General Practice" by Dr. Harrison F. Flippin; and "The Laboratory Situation in Pennsylvania" by Dr. Frank W. Konzelmann, were heard by a relatively small but enthusiastic group. Why such a program of talent should be enjoyed by so few is an enigma to all who were privileged to listen.

During the luncheon 50-year testimonial certificates were presented to Drs. William B. Beaumont, Wyoming County; Ashton H. Morgan, Luzerne County; and Thomas C. Zulick, Northampton County.

At the after-luncheon program our State Society officers and representatives, Drs. Borzell, Buckman, Donaldson, and Palmer, made characteristic remarks which answered many questions that our absentee members are constantly asking local society officers, yet when the oracle speaks they are conspicuously absent.

The woman's auxiliary held a morning program with Mrs. Clarence D. Hummel, councilor for the Third District, presiding. Addresses were given by Mrs. Louis A. Milkman and Mrs. John Howorth, presidents, respectively, of the Woman's Auxiliaries of Lackawanna and Luzerne County Societies; Dr. Francis F. Borzell, president of The Medical Society of the State of Pennsylvania; Mrs. Robert S. Woehrle, councilor of the Twelfth District; and Mrs. Charles C. Crouse, of Westmoreland County, president-elect of the Woman's Auxiliary to The Medical Society of the State of Pennsylvania.

Bradford County Society

Bradford County Medical Society has 44 active members, an increase of 3 over last year. Nine scientific meetings were held during the year, either in Sayre or Towanda, and the average attendance was better than 50 per cent of the membership. The annual outing meeting was held late in June. This was a joint meeting with the woman's auxiliary, and President-elect Lewis T. Buckman, of the State Medical Society, and Mrs. Robert S. Woehrle, district councilor of the woman's auxiliaries, were among the invited guests. Sixty members and guests enjoyed a delicious dinner and heard Dr. Buckman reminisce in a delightful manner on a boyhood vacation spent in Bradford County as a prelude to an inspiring talk on the future of medicine.

Last fall a very successful postgraduate course was sponsored by the society, which was well attended by the members and also attracted members from neighboring county societies.

The representatives from the speakers' bureau have given talks on timely subjects before different civic organizations.

The co-operation of the physicians in the examination of selectees for government service is excellent.

Other committees are functioning satisfactorily.

There is increased interest in the contacting of members of the legislature, all of whom co-operate in the matter of health legislation approved by organized medicine.

Each year it is the happy privilege of the councilor to compliment and commend the Bradford County Society for the members' whole-hearted co-operation in all society activities. They have asked for and will have the privilege of being sponsors and host for the 1942 councilor district meeting. Already they are negotiating to have as the principal guest speaker an outstanding figure in organized medicine.

Luzerne County Society

Luzerne County Medical Society has 339 active and 15 affiliate members. Six deaths occurred during the year. Seventeen scientific meetings were held, social and business meetings, one each, with an average attendance of 66, which shows a woeful lack of proper membership interest. Eight meetings were addressed by guest speakers, 9 by local society members, which is in accord with society traditions of maintaining and developing local interest in scientific advancements.

Due to lack of interest, no scientific seminars were sponsored during the year by the society, and for the same reason the excellent seminars sponsored annually by the Mercy and General Hospital staffs were curtailed, so that instead of each staff sponsoring a program yearly in the future, a seminar will be a biannual affair with each staff. This is indeed a regrettable development, for the programs were excellent. The seminar sponsored by the General Hospital this year was held in April, and although it was of the high character that should appeal to every physician, the attendance was poor. I am at a loss to explain the lack of interest in scientific medicine by the rank and file of the members of the Luzerne County Medical Society. So many members will make heavy sacrifices of time and money to go elsewhere to seek scientific enlightenment, yet when it is brought to them, they are unwilling to give up the required few hours of listening time. It must be a paradox which is explained best by the old adage of "hills are green far away" regarding the apparently superior virtues of "distant pastures."

The committee work of the society has been commendable. The Healing Arts Advisory Committee to the State Department of Public Assistance headed by Dr. Albert R. Feinberg deserves special recognition for loyalty and devotion in the defense and enforcement of basic principles of organized medicine. I hope their arduous duties will be minimized with the changing economic upheaval brought about by national defense preparation.

Dr. Thomas R. Gagion, chairman of the Public Health Legislation Committee, sponsored a program which brought to the society one of our talented members, Dr. Leo C. Mundy, state senator from this district, who has been so co-operative with Drs. Palmer and Gagion in safeguarding the public's interest in medical legislation. Dr. Mundy's activities should make us all grateful.

The Hazleton Branch continues to function in a manner which makes happy and proud those of us who helped them to organize. Ten scientific meetings are held annually, and they continue to bring to their membership progressive programs of talented speakers which help to keep them abreast of progress in medicine. Last year I recommended a change in the by-laws of the Luzerne County Medical Society to require a joint meeting between the officers of the branch and the Board of Directors of the Luzerne County Medical Society twice yearly, one meeting in Wilkes-Barre, the other in Hazleton. I am of the opinion that such meetings would be most helpful in promoting mutual understanding and in the prevention of friction which might develop from misguided members with an ax to grind.

Susquehanna County Society

Susquehanna County Medical Society has grown from 17 to 18 members during the year, although 2 members are now in active military service. The society has adopted regulations to protect the professional interests of the doctors who are now or will be called to active military service.

Meetings are held quarterly at different points throughout the county and are of a combined business and scientific nature.

This society is and always has been active in co-operating with the State Health Department and with the State Medical Society in all matters concerning the health of the people.

Wyoming County Society

Wyoming County Medical Society has 13 members, 2 less than last year. During the year 6 meetings were held—5 scientific and one business—and one outing. Excellent co-operation has been given by the members in the medical examination of selectees by the registration boards and proper resolutions have been adopted to protect the professional interests of physicians who have given up their home work to enter the nation's defense service.

An active speakers' bureau is functioning, supplying speakers for all occasions where health and medical topics are to be discussed.

Legislators and the congressmen are informed from time to time of the legislation which in the judgment of the profession should or should not be enacted for the best interests of the health of their constituents.

Peter P. Mayock,
Trustee and Councilor.

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REPORTS OF STANDING COMMITTEES

COMMITTEE ON PUBLIC HEALTH LEGISLATION

To the President and House of Delegates:

The committee regrets to report the loss of a very prominent and eminent member, Dr. Arthur B. Fleming, of Tamaqua, who passed away at his home on Dec. 21, 1940. He was always willing and ready to do anything in his power to assist the committee, and his keen devotion to the traditions of medical practice was his constant guide during those long years of service to his own county society and to the committee.

Legislative Activities

The final official history has not yet been printed; therefore, the following is a brief résumé of the bills introduced during the recent legislative session with potentialities involving medical and public health service:

House Bill No. 1048—the Chiropractic Bill—was recommitted to the Committee on Professional Licensure on June 24 where it rested for the remainder of the session.

House Bill No. 1118—the Chiropody Bill—was referred to the Committee on Professional Licensure on Apr. 7 and remained there throughout the session.

Senate Bill No. 575—the amendments to the Medical Practice Act of 1911, sponsored by our State Medical Society—passed the Senate and the House and was signed by the Governor on Aug. 6, 1941.

The Nurses' Bills—House Bills Nos. 672 and 673—remained in the Committee on Professional Licensure of the House. House Bills Nos. 674 and 675 passed the House on June 17, were referred to the Committee on Public Health in the Senate on June 18, and remained in that committee for the remainder of the session.

Senate Bill No. 1215, granting a supplemental appropriation of $100,000 for better enforcement, passed the House and Senate and was signed by the Governor on Aug. 6, 1941.

House Bill No. 481—the Milk Bill—came out of the conference committee of members of the House and Senate and was amended in such a manner that it repealed existing municipal ordinances and prevented the enactment of new ordinances inconsistent with the act for the production and distribution of milk to the larger cities, and placed the power of making regulations in the hands of a newly created dairy council—the majority of representatives on this council are members of dairy industries—thus taking away the present power of the State Department of Health. This bill is an amendment to Act 210—the milk control law—which provides for minimum standards, and the enactment of any local ordinances exceeding these minimum standards would be inconsistent.

Acting Secretary of Health Alexander H. Stewart, Director of Health of Pittsburgh I. Hope Alexander, Director of Health of Philadelphia Hubley R. Owen (through his representative, Dr. Martha Tracy), Dr. Grimm, Colonel Hitchens, and your chairman, after careful consideration of these amendments, agreed to request the Governor to veto this bill. This the Governor did on Aug. 11, 1941.

None of the Workmen's Compensation Bills were passed.

House Bill No. 420—the Sterilization Bill for the mentally deficient—was referred to the Committee on Judiciary General on Feb. 18 and remained in committee.

Federal Legislation

HR 4965, providing for the employment of osteopaths as interns in the army, has passed the House and Senate and now awaits the signature of the President. This is permissive legislation and is temporary because the bill provides for the fiscal year ending June 30, 1942; therefore, the Secretary of War will be authorized to use, if he wishes, the money made available by this bill to employ osteopaths as interns in army hospitals. The authorization does not make such employment mandatory.

HR 4476, providing for sundry matters affecting the military establishment and containing a similar authorization, has passed the House of Representatives. This bill represents permanent legislation and is now in the Committee on Military Affairs, of which Senator Reynolds is chairman. Your committee has written to Senator Reynolds and also to Senators Guffy and Davis, requesting them to suggest an amendment whereby osteopaths may be employed as interns provided they obtain the necessary legal requirements for their education that doctors of medicine must conform to at the present time. If such an amendment cannot be inserted, your committee suggests the deletion from the bill of osteopaths serving as interns in the army hospitals.

While the Wagner National Health Act and the Hospital Act have not moved very rapidly in the present session of the Federal Congress, yet certain measures such as the appropriation of large sums for the betterment of physical health of the citizens, which is largely under the control of physical educationists, and other measures based on defense have been introduced. Also bills were introduced providing that chiropodists and dietitians be given commissions in the army.

Your committee has been receiving bulletins regularly from the Bureau of Legal Medicine and Legislation of the American Medical Association and has promptly followed up all requests on the part of this very active and helpful bureau.

Legal Activities

On Feb. 21, 1941, an opinion by Judge Hargest in the Court of Common Pleas of Dauphin County was handed down in the case of the Pennsylvania Chiropractor's Association—an unincorporated association—by Blanche R. Young, trustee ad litem, vs. the State Board of Medical Education and Licensure of the Department of Public Instruction of the Commonwealth of Pennsylvania, and Dr. Irvin D. Metzger, and Dr. Charles L. Shafer. This opinion sustains the position of the Board of Medical Education and Licensure and contains quotations from nearly all the opinions in the cases in which the medical board has been taken into court by chiropractic, naturopathic, and other limited licensee groups. The following clear and concise opinions are among these quotations:

In Commonwealth vs. Long, 100 Pa. Super. Ct. 150, 155, the court said:

"The adopter of every new cult alleged to be of benefit in the healing of disease has no constitutional right to practice it as a profession upon his fellowmen, because the legislature has not provided for an examination into his knowledge and skill with respect to it, or for the issuance of a license to him to practice it as a branch of the healing art. The same rule applies to him as to everybody else. He cannot practice medicine and surgery in any of its branches, the healing art in any of its forms, diagnose diseases or hold himself out as a practitioner able to make diagnoses and treat diseases, without complying with the requirements of the Act of 1911 and its supplements and amendments, and obtaining a license as provided for by that act. That this may entail a longer course of instruction, a wider knowledge, and a greater skill than he may think necessary is unimportant. The criterion is what the legislature has enacted, not what his personal opinions may be."

In Commonwealth vs. Jobe, 91 Pa. Super. Ct. 110, 113, the court said:

"Specialists in, or advocates of, any particular branch or division of medicine or surgery, by whatever newly coined word it may be known, should know by this time that the declared policy of our laws regulating medicine and surgery is that no person shall engage in the practice of that profession in the commonwealth without complying with the statutory requirements as to professional qualifications and that efforts to evade those requirements are engaged in at their peril."

On July 8, 1941, the Department of Justice at Harrisburg rendered to Hon. E. Arthur Sweeny, Secretary of Welfare of the Commonwealth of Pennsylvania, an opinion which permits a student intern after serving his course as such in an approved hospital for student intern training in this state to continue in that hospital as a student intern from the time he takes his examination for licensure until such time as he is notified of the results of his examination. This opinion conforms to a brief submitted to Attorney General Margiotti in 1938, written by a committee authorized by the Board of Trustees of The Medical Society of the State of Pennsylvania to consider this question. Considerable legal advice was necessary in the framing of the amendments to the Medical Practice Act of 1911, known as Senate Bill 575. During the 1941 legislative session legal opinions were sought by the committee on various bills introduced into the legislature and your committee was guided accordingly.

Pennsylvania Conference of Professional Licensees

The Pennsylvania Conference of Professional Licensees, after careful consideration, decided to limit its legislative activity entirely to the question of a larger appropriation in order to develop better law enforcement. The conference, therefore, did not set up any legal bureau as was first contemplated or develop any widespread legislative activities. It concentrated its energy on a larger appropriation for the purpose of enabling the Bureau of Enforcement in the Department of Public Instruction to increase its facilities and obtain more efficient preparation of the cases and thus accomplish its purpose.

After considerable discussion in the House, the original recommendations of the Governor as far as appropriations were concerned were reduced. Among these reductions was $500,000 to the Bureau of Enforcement instead of $600,000 as recommended by the Governor. The Senate, after careful consideration, passed the reduced appropriation bill. It then became necessary to present bills providing for supplemental appropriations in order to raise the appropriations to the level which the Governor originally requested. This was done by the conference and the additional $100,000 was embodied in House Bill 1877 and Senate Bill 1215. During the passage of Senate Bill 1215 through the legislature, the provisions of House Bill 1877 were already in Senate Bill 1215 when it reached the House. Therefore, Senate Bill 1215 finally passed the House and Senate and is now in the hands of the Governor. This accomplishment on the part of the conference, especially under the circumstances, has been a step in the right direction. However, considerable work must be done in the future to bring this appropriation somewhere near $800,000, which is the amount of the registration fees paid into the state treasury each biennium by licensees, all of which should be used for the enforcement of the various practice control acts.

Public Assistance Medical Service

On Sept. 17, 1940, at the office of the State Medical Society, 230 State Street, Harrisburg, there was a meeting of the State Healing Arts Advisory Committee, the Philadelphia County Healing Arts Assistance Committee, representatives of the Pennsylvania Department of Public Assistance, and the following invited guests: Dr. Carl E. Rice, U. S. Public Health Service, consultant to Social Security Board; Dr. Gertrude Sturges, consultant on medical care, American Public Welfare Association; Mrs. Edna C. Wright, regional representative, Bureau of Assistance, Social Security Board; Mr. Guy H. Bloom, executive director, Philadelphia County Board of Public Assistance.

This meeting was for the purpose of studying the various plans for the medical care of the needy which are in operation throughout this country and Canada with the idea of devising changes in the medical care program under the Department of Public Assistance in Pennsylvania which might improve the program.

Meetings of the State Healing Arts Advisory Committee and the Philadelphia County Healing Arts Assistance Committee were held for the same study. On Jan. 15, 1941, the Board of Trustees of The Medical Society of the State of Pennsylvania authorized a meeting of the chairmen of a number of county healing arts assistance committees. This meeting was held at 1:45 p. m. at 230 State Street, Harrisburg. Those present were Drs. Robert T. Devereux, Chester County; Albert R. Feinberg, Luzerne County; Albert R. Garner, Montgomery County; Kelse M. Hoffman, Venango County; George C. Hohman, Schuylkill County; Howard A. Johnson, Fayette County; J. Elmond Kempter, Franklin County; Tom K. Larson, Warren County; Martin T. O'Malley, Lackawanna County; Charles C.

Rinard, Allegheny County; Herman H. Walker, Crawford County; and C. L. Palmer, chairman of the State Healing Arts Advisory Committee. Dr. Rinard was selected chairman of this committee.

After careful discussion in which each representative gave a clear, concise report from his county which reflected a great deal of detail and effort in its preparation, the following resolutions were passed:

Whereas, This committee, composed of the subadvisory committee chairmen representing each councilor district in the State of Pennsylvania, met in Harrisburg, this fifteenth day of January, 1941, for the purpose of a complete discussion of the medical program of the medical care of the indigent under the Department of Public Assistance of the State of Pennsylvania, and

Whereas, This committee has thoroughly discussed the plans of medical care of the indigent in other states and cities—the costs and visits per patient, the morbidity, the control and efficiency, the allocations and prorations of the present medical program of the Pennsylvania Department of Public Assistance, and

Whereas, It seems evident that the present Pennsylvania program is outstandingly the best in the country today, and

Whereas, The costs per patient and the incidence of sickness of the present program on the basis of approved bills rendered before proration are low, and

Whereas, The control of the program of the healing arts group, as indicated by the above low cost, seems to be careful, adequate, and well placed, and

Whereas, The quality of service given to the patient is admittedly virtually the same as given in private practice and therefore adequate, and

Whereas, The morbidity under the present program seems to be somewhat under that normally to be expected, according to all medical surveys available, and

Whereas, The allocations to this medical program have not been sufficient since the beginning of the program, even for a minimum medical program, and

Whereas, Professional expenditures covering rural mileage should be recompensed, and

Whereas, Druggists' charges should be readjusted and their professional fees subjected to proration, and

Whereas, Many physicians are now attending indigent welfare patients and not submitting invoices to the Department of Public Assistance, which later will increase the volume of this program, and

Whereas, Figures seem to indicate that our incidence of sickness may naturally increase the volume of our program 2 or 3 per cent, without the appearance of an epidemic, and

Whereas, By an allocation of 35 cents per month per person on relief to this medical program, the medical profession of this state will carry one-half the burden of the medical care of the indigent and the taxpayer the remaining one-half, be it

Resolved, That our State Central Healing Arts Committee and our State Department of Public Assistance be requested to continue the present program.

* * *

Whereas, The committee of Subadvisory Committee chairmen, representing all the councilor districts in the State of Pennsylvania, assembled in Harrisburg on Jan. 15, 1941, have reviewed the payments made to pharmacists participating in the Public Assistance program, and

Whereas, The committee concluded that the payments to druggists were unequable compared with the payments to the remaining healing arts group, be it

Resolved, That we advocate to the State Healing Arts Advisory Committee and the State Department of Public Assistance that the fees of the pharmaceutical group be readjusted and that they accept a similar proration on their professional fees.

The minutes of these meetings and these resolutions were presented to your Board of Trustees and the resolutions were read before the next meeting of the State Healing Arts Advisory Committee.

On Feb. 14, 1941, the State Healing Arts Advisory Committee appeared before the Department of Public Assistance and the Board of Public Assistance, presenting their data, including an expanded dental program adopted previously by the State Healing Arts Advisory Committee, the financial extent of which was to be limited to 15 per cent of the monthly allocation, and requesting an allocation of 35 cents per month per individual on the Public Assistance rolls. This was granted by the department and the state board for a trial period of 6 months, beginning Mar. 1, 1941. The expanded dental program as presented by the dental representatives and adopted by the State Healing Arts Advisory Committee follows:

Preamble

1. An effort to rehabilitate those individuals on relief who, because of dental infirmities, are unable by this affliction to get back into normal gains of employment; whereas, if these conditions were improved, the individual could be self-supporting and not a tax burden.

2. An effort to widen the scope of the dental program so that a more adequate service can be rendered to applicants.

3. An effort to have a larger number of more skilled practitioners interested in administering the program.

4. An effort to have those dentists of exceptional low earning, to be able to increase their annual income, thus helping their station.

The dental portion of the medical program covers conditions for the relief of pain. An assistance recipient suffering from a dental condition, for which the extraction, filling, or treatment of a tooth or teeth, or adjacent tissue, is the only means of obtaining relief, should go directly to the dentist of his choice.

If, in the opinion of the dentist, it is not wise to do all the extracting indicated at the first visit, a second visit should be required at the end of 15 days.

If conditions indicate an unusual and emergency number of extractions, fillings, or treatments, special permission should be procured in advance from the dental subcommittee of the county healing arts advisory committee.

Service charges:

As recommended by the Pennsylvania State Dental Society.

The following fee rates will be in force and effect, including anesthetics:

Extractions:

(1) One person	
For the extraction of the first tooth	$2.00
For the extraction of each additional tooth	1.00
(2) Additional person or persons, members of the same family or assistance group, applying to dentist at the same time.	
For the extraction of each tooth	1.00

(3) Maximum fee rates	
For each person—on any one invoice	$5.00
For additional person or persons, members of the same family or assistance group, applying at the same time on any one invoice	4.00
Fillings:	
Permitted only if aching tooth need not be extracted.	
Amalgam:	
Silicate cement (In 12 anterior teeth only):	
For first tooth filled	2.00
For each additional tooth filled	1.00
Cements:	
For each tooth filled	1.00
Complete service of any one tooth is considered one filling.	

The same fee rate as applied to extractions will prevail for the first person and additional persons of the same family or assistance group applying to the dentist at the same time.

Treatments:	
Prophylaxis and charting defects	1.00
Pyorrhea and Vincent's infection:	
Treatment completed includes prophylaxis	
Each treatment	1.00
Maximum amount	5.00
Acute dento-alveolar abscess:	
Lancing and complete follow-up care	1.00
Emergency impactions:	
Preoperative and postoperative treatments included	
Preoperative and postoperative x-ray pictures included and must be submitted with the invoice	7.00
It is within the discretion of the professional subcommittee to determine the degree of classification of the impaction as revealed by the x-ray picture and prorate the fee accordingly.	
Fractures of the jaw:	
Preoperative and postoperative x-rays to be attached to invoice	
Treatment to completion	20.00
Operations other than mentioned:	
The fee shall be arranged with the county advisory healing arts committee in consultation with the proper professional subcommittee.	
It is recommended that more extensive surgical requirements of a more technical character be referred to a hospital in the vicinity, retaining a department of oral surgery where these cases may have the advantage of skilled service.	
Crown and bridge:	
Resetting crown and bridges	1.00
X-ray services:	
Where it is deemed necessary in the dentist's opinion to have x-ray pictures, in order to render an emergency service or arrive at a diagnosis, such pictures are to be taken in duplicate. Duplicate films must accompany the invoice along with reasons for taking the pictures.	
First picture	.50
Each succeeding picture	.25
Maximum allowance which is to cover the entire month	$3.00

Emergency restorations:

All emergency restorations must have consent of healing arts subcommittee, then approval of the Department of Public Assistance, and final approval of the Healing Arts Dental Subadvisory Committee.

The dentist is to indicate or state his reason for this emergency replacement.

It is within the jurisdiction of the Dental Healing Arts Subcommittee to approve or reject an application.

Arch qualifications:

Missing teeth to be considered for replacement.

(1) Any one or all of the 6 anterior teeth that are absent on each arch.

(2) Any instance where at least 5 or more teeth are absent on each arch.

Fee rate:	
Denture—	
1 to 3 teeth, inclusive	$11.00
4 to 6 teeth, inclusive	13.00
6 or more teeth	15.00

Emergency restorations are not to be prorated.

Since the granting of 35 cents allocation, the Dental Society objected to the interpretation placed upon the 15 per cent limit by the State Healing Arts Advisory Committee. They claim they would be doubly prorated. The interpretation of the State Healing Arts Advisory Committee is as follows: The dentists will present their bills as usual and after proration, if any county is over 15 per cent of the monthly allocation in that particular county, the dental subadvisory committee of that county will reduce the dental bills to 15 per cent. This limitation was placed on the dental program because there were no statistics available as to the cost of such a program and the 15 per cent was recommended by the dental representatives.

The dental program, which originally provided for extractions only, is considered by the State Healing Arts Advisory Committee as markedly insufficient. However, inasmuch as the extraction program cost about 7 per cent of the 20-cent allocation, the 15 per cent of a 35-cent allocation should be ample to pay for the expanded dental program and keep it under control for the 6 months' trial period and prevent it from costing an exorbitant sum which would reduce the allocated sum to such an extent that the physicians, nurses, clinics, and osteopaths would again be prorated to an unbearable extent.

The question of the method of payment to the dentists in this expanded dental program has been the subject of discussion in every meeting of the State Healing Arts Advisory Committee since Mar. 1 and remains unsettled, although conversations are continuing and it is to be hoped that a satisfactory arrangement may soon be consummated. The question of prorating the pharmacists' professional fee is still under discussion.

The table appended is an up-to-date report of the prorations in 1940 previous to raising the allocation to 35 cents and for several months in 1941 since raising the allocation. In practically every county there has been considerably less proration and in a great majority of the counties the participants are receiving 100 per cent of the approved bills.

Proration in DPA Medical Program

(Showing percentage of approved bills paid)

Counties	1940												1941					
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Adams	46	53	53	42	32	32	32	32	38	30	35	42	58	59	70	73	76	74
Allegheny	59	63	59	50	41	39	36	37	35	30	37	62	54	89	96	89	88	90
Armstrong	87	91	74	60	64	53	43	55	52	59	57	87	100	98	100	100	100	100
Beaver	74	75	67	54	52	59	52	62	53	57	63	79	70	100	100	100	96	100
Bedford	88	83	80	75	88	85	62	80	70	58	86	100	100	100	100	100	100	100
Berks	51	49	51	60	43	38	36	46	42	36	47	69	73	81	100	100	...	...
Blair	74	71	71	60	52	46	46	50	59	52	54	72	83	100	100	100	100	98
Bradford	45	60	64	47	43	38	41	53	58	41	57	69	92	100	100	92	75	84
Bucks	59	60	56	51	46	41	44	51	48	39	37	62	66	70	80	71	76	70
Butler	62	65	74	44	40	45	37	40	45	40	42	62	76	93	100	100	100	100
Cambria	74	67	63	56	45	45	41	41	43	42	46	68	62	79	90	84	100	84
Cameron	100	100	80	66	73	59	56	61	43	74	50	80	100	100	100	100	100	100
Carbon	65	69	63	59	61	41	42	48	46	54	55	66	61	94	100	100	100	100
Centre	83	79	79	64	50	64	63	61	61	56	56	79	84	100	100	100	100	100
Chester	100	100	100	67	68	66	83	69	88	81	77	100	100	100	100	100	100	100
Clarion	64	77	63	55	49	44	42	42	37	56	58	84	100	100	100	100	100	89
Clearfield	100	100	94	72	73	73	65	53	67	57	69	100	91	100	100	100	95	100
Clinton	100	100	100	100	86	100	73	57	83	72	78	88	95	100	100	100	100	100
Columbia	54	67	63	57	40	50	56	37	34	36	56	86	81	100	100	100	100	100
Crawford	87	63	76	69	57	52	53	52	67	53	57	90	100	100	100	100	100	100
Cumberland	78	100	85	71	54	63	49	56	53	45	49	79	72	91	100	100	88	99
Dauphin	56	55	55	42	39	36	31	34	42	40	46	74	76	93	93	94	81	82
Delaware	63	73	68	52	55	46	52	55	61	51	61	88	98	100	100	100	100	100
Elk	56	65	72	51	43	42	40	31	21	12	12	90	94	97	100	100	100	100
Erie	65	63	68	53	39	43	39	38	46	37	39	57	65	81	86	91	83	82
Fayette	100	91	86	76	67	61	72	64	70	60	68	100	100	100	100	100	100	100
Forest	100	100	100	92	52	55	34	32	72	96	63	98	93	100	91	84	100	74
Franklin	76	92	95	63	53	44	39	40	50	60	68	100	84	100	100	100	100	100
Fulton	100	100	99	86	52	100	79	100	80	86	73	74	65	78	66	83	79	78
Greene	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Huntingdon	100	81	96	87	94	78	100	37	61	44	72	100	100	100	94	98	86	82
Indiana	85	86	73	65	53	59	46	48	55	42	48	68	71	95	98	94	100	93
Jefferson	98	89	100	96	84	80	70	90	83	69	77	95	94	100	100	100	100	100
Juniata	64	65	60	51	62	81	63	42	63	60	58	60	63	85	100	85	96	100
Lackawanna	72	56	55	44	34	35	35	31	35	30	32	65	54	80	87	88	86	86
Lancaster	74	83	80	68	55	56	56	56	54	56	61	86	74	91	100	91	96	87
Lawrence	100	91	83	67	53	58	53	45	65	52	52	87	83	100	100	100	100	100
Lebanon	88	93	87	72	65	58	51	63	73	77	75	80	96	100	100	100	100	95
Lehigh	56	65	57	45	36	36	30	34	32	32	33	41	47	56	58	63	66	70
Luzerne	82	66	84	64	52	49	43	42	45	42	49	78	63	98	100	98	100	100
Lycoming	48	50	52	40	35	27	29	28	36	29	31	54	56	68	92	84	79	77
McKean	48	53	64	38	28	28	18	17	27	41	52	100	100	100	100	100	100	75
Mercer	52	57	51	41	38	33	40	35	38	35	37	62	61	80	74	80	86	77
Mifflin	60	63	57	59	52	50	46	46	46	52	54	62	70	96	100	100	...	...
Monroe	72	67	48	52	40	36	28	69	59	48	54	78	85	93	100	85	100	80
Montgomery	78	87	83	67	54	51	47	53	56	51	48	68	65	90	93	97	93	100
Montour	100	100	100	98	87	97	77	70	84	77	100	100	93	100	100	100	100	100
Northampton	57	58	50	45	40	40	35	38	41	37	40	51	65	68	77	81	82	...
Northumberland	78	85	80	61	46	43	42	40	49	44	44	79	79	97	99	100	100	...
Perry	61	100	80	62	51	53	72	68	65	54	49	68	100	100	100	100	89	83
Philadelphia	72	82	66	48	35	31	31	30	30	23	27	46	48	67	76	...	...	...
Pike	89	100	47	46	62	54	57	57	32	36	71	61	83	100	100	61	67	95
Potter	62	63	59	48	29	31	25	22	20	26	57	86	97	78	77	71	69	54
Schuylkill	47	58	53	42	40	30	29	28	31	30	29	46	45	63	65	60	63	...
Snyder	93	95	95	74	58	79	75	73	71	89	91	91	100	100	100	100	100	100
Somerset	81	74	81	67	59	59	59	58	64	65	66	99	100	100	100	100	100	100
Sullivan	56	78	56	58	39	36	50	35	32	20	46	56	56	77	94	79	76	71
Susquehanna	49	52	47	34	32	30	27	30	33	35	34	51	53	65	82	65	66	56
Tioga	55	71	59	39	37	28	30	38	47	27	38	63	95	85	83	77	72	79
Union	82	81	77	90	56	58	51	42	54	36	40	58	62	77	98	99	89	...
Venango	69	71	62	54	50	46	41	43	49	42	44	68	87	96	100	100	100	100
Warren	77	85	70	60	45	54	50	63	63	40	74	79	100	96	100	100	100	100
Washington	87	81	68	58	52	57	45	48	51	51	50	70	70	96	100	100	100	100
Wayne	59	61	99	55	53	47	39	51	52	45	47	70	98	98	100	100	100	90
Westmoreland	82	83	74	66	58	50	49	55	68	64	68	100	87	100	100	100	100	100
Wyoming	66	79	63	63	50	55	60	48	53	50	48	65	64	73	91	100	87	79
York	53	61	60	52	51	59	45	46	46	44	44	68	66	85	83	76	86	81

The same and additional problems in legislation will be confronted in the next session of the legislature. Therefore, the committee urges the maintenance of organizational effort during the coming year and welcomes suggestions from the membership in order to develop consistently sound effort toward the protection of the public through maintenance of present standards of service, and by increasing these standards where necessary and practical.

The Committee on Public Health Legislation desires to express its appreciation of the excellent and willing assistance on the part of the staff of the Harrisburg office, especially Mr. Lester H. Perry and Miss Iris M. Otterfelt.

J. Stratton Carpenter,
Joseph A. Daly,
Joseph Scattergood, Jr.,
Francis J. Conahan,
W. Newton Long,
Joseph S. Brown,
Walter S. Brenholtz,
*Arthur B. Fleming,
James D. Stark,
Charles A. Rogers,
James L. Whitehill,
Robert J. Sagerson,
Thomas R. Gagion,
Francis F. Borzell,
Walter F. Donaldson,
Park A. Deckard, *Vice-Chairman,*
Chauncey L. Palmer, *Chairman.*

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* Deceased.

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COMMITTEE ON PUBLIC RELATIONS

To the President and House of Delegates:

Convention Activities

All members of the House of Delegates are cordially invited to visit Parlor G, on the Seventeenth Floor of the Hotel William Penn, during the 1941 convention at Pittsburgh to view the several manners in which our committee believes county medical societies can best attract the eye and the ear of the public with authoritative information on health topics.

This demonstration of public relations activities should be of interest particularly to members of public relations committees of county medical societies, who, together with representatives of their various woman's auxiliaries, are urged to visit it.

The work of the committee of late has been proceeding largely on its own momentum due to the splendid work of the speakers' bureaus in more than a few counties. These bureaus, augmented by the work of Mrs. Edna Kech of the State Health Department, have supplied presiding chairmen and speakers for an enormous number of public meetings with programs on health topics. There has been no new project undertaken for some time except experiments with sound "movies" as an adjunct to health programs.

Sound Health Motion Pictures

A new program for public health instruction was introduced this year with the presentation of health motion pictures in sound. The latest type of projector and sound equipment together with a large, portable screen was purchased, and the lay employee of this committee was qualified as a licensed operator, a necessary preliminary to all sound motion picture shows before public groups.

A library of instructive, attractive, and authoritative films has been procured and the program, wherever presented, has prompted enthusiastic endorsement from the public and physicians. Fifteen health meetings were scheduled during the early months of the year and, at 7 of these, physician speakers discussed the motion pictures and answered questions from the audience.

The subjects covered by the films include tuberculosis, cancer, heart disease, diabetes, syphilis, and safety. The pictures are professionally made, either at Hollywood, by The March of Time, or by educational film producers, and graphically and understandingly tell their story so that all may profit by them. A copy of the tuberculosis film distributed by the Pennsylvania State Department of Health, containing an introduction by the late Secretary of Health, Dr. John J. Shaw, was presented to the State Medical Society.

Plans are being considered for the purchase of at least two more sound projectors, which will be located in centers of population. There they will be readily available for county medical societies in these districts. Films, with "trailers" crediting the society, will accompany the projectors.

The types of groups interested may be judged from the meetings already held. They include high school assemblies, parent-teacher associations, health centers, public health meetings, women's clubs, Rotary Clubs, college physical education classes, Y. M. C. A. groups, county medical society and woman's auxiliary meetings, and state society councilor district meetings.

It is interesting and most encouraging to note that the Lackawanna and the Schuylkill County Societies have recently installed such machines.

Newspaper Releases

The 1941 post card checkup conducted annually during July to determine the number of Pennsylvania newspapers using the daily or weekly "Your Health" or the "Daily Dozen" health columns, which have been issued continuously since 1933, has been completed. The current census shows that the "Your Health" column is being regularly used by 25 daily and 58 weekly newspapers throughout the state, while 18 newspapers are publishing the "Daily Dozen" feature.

Since the newspaper checkup was made last month, 10 additional daily newspapers have requested one or the other of the daily columns for publication.

Newspapers throughout the state have been liberal with space, not only as regards the health columns but in printing items pertaining to the numerous county medical society and councilor district meetings, the health poster contest, and health meetings where motion pictures were shown.

During May of this year the Philadelphia *Record* published a 16-page health supplement sponsored by the Philadelphia County Medical Society, and in March the Pittsburgh *Post-Gazette* published a health supplement sponsored by the Allegheny County Medical Society.

Health Poster Contest

The Allegheny County Medical Society and the Lehigh County Medical Society conducted individual health poster contests in public, parochial, and vocational schools. The traveling poster show, which includes the showing of prize-winning posters in previous contests, was shown to more than 2000 students in Allegheny County. Although the state-wide health poster contest was not conducted this year, it is believed this medium is an important source of health information to children of high school age and under, and this committee offers its experience and facilities to county medical societies desiring to sponsor a health poster contest.

Health Show

The committee took part in the Pittsburgh Health Show at the Buhl Planetarium, which was officially opened by President Francis F. Borzell and Editor Morris Fishbein and viewed by 50,000 persons during its 6 weeks' showing. The committee displayed two medical exhibits procured from the American Medical Association and an assortment of prize-winning health posters from various parts of the state.

Periodic Health Examinations

Dr. Robert M. Alexander, of Reading, chairman of the Subcommittee on Periodic Health Examinations, reports that the committee has continued to function. At the 1940 meeting of the State Society in Philadelphia this subcommittee had an exhibit in the public health exhibit.

The committee is now in position with modern health examination blanks, exhibits, and literature for the next step in its program, which is teaching the family physician how to perform periodic health examinations. Lectures on this important phase of medicine will be given in the scientific exhibit at the 1941 convention of the State Society in Pittsburgh.

Continued sales of health examination blanks by the committee show an increasing interest by physicians throughout the state in the annual health audit of their patients.

The committee believes that good medical service begins with prevention, and that the personal periodic health examination by the family doctor will eventually become the custom.

Conclusion

The committee feels that with its new, more direct approach to the public through sound motion pictures, aided by a physician speaker, the work of instructing the public has taken a great stride forward. The following year should witness a growth in opportunities to present the program to more and more groups. At the same time, the committee aims to maintain to their full measure those other features which have been a part of its work during the years. We solicit the assistance of the officers of the State Medical Society, the members of the House of Delegates, and the elected representatives of all component societies.

Respectfully submitted,

ROBERT M. ALEXANDER,
PATRICK E. BIGGINS,
JOSEPH W. POST,
LEONARD G. REDDING,
ELMER G. SHELLEY,
CLAUDE W. ASHLEY,
JOHN A. DAUGHERTY,
EUGENE P. PENDERGRASS,

Ex-officio:
FRANCIS F. BORZELL,
LEWIS T. BUCKMAN,
ROBERT L. ANDERSON,
JOHN J. BRENNAN,
WALTER F. DONALDSON,
MR. ROY JANSEN,
Publicity Representative,

FREDERICK M. JACOB, *Chairman.*

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COMMITTEE ON MEDICAL BENEVOLENCE

To the President and House of Delegates:

Twenty-six persons are at this time receiving monthly or quarterly benefits from the medical benevolence fund of The Medical Society of the State of Pennsylvania —sick or aged members of our State Medical Society, and widows or dependents of deceased members.

A study of the subjoined figures might readily lead one to believe that the nation's prosperity may be reflected in the demands upon this fund. In 1939 our committee reported the expenditure of $9775, and now, in 1941, the demands were met by the distribution of $7840.

Since our last report 3 new beneficiaries were approved; 2 are deceased; 3 were discontinued. Two of the latter were physicians who due to illness were obliged to give up their practice for a time but are now able to carry on without the aid of the benevolence fund. Ordinarily, it is physician beneficiaries who receive the largest sums from the medical benevolence fund, unless it be widows with young children.

Earnings on investments and deposits continue to decrease yearly. This year they are reduced by the sum of $341.21. Happily, to offset this consistent loss in income in spite of a steady increase in the principal sum, the contributions to the fund from the various woman's auxiliaries throughout the state have consistently increased in amount, so that again, in this report, we record their largest; namely, $6,221.95. (Ten auxiliaries having failed to remit their last year's contribution in time for publication in the September, 1940, JOURNAL, their contributions totaling $520 are included in this total for 1941.) All contributions were acknowledged individually as well as through the columns of THE PENNSYLVANIA MEDICAL JOURNAL. The committee again expresses its appreciation to these earnest auxiliary members for their valued aid.

The report of the treasurer of the Medical Benevolence Committee follows:

Balance, Sept. 1, 1940		$2,660.72
RECEIPTS		
Contributions from woman's auxiliaries	$6,221.95	
Contribution from West Branch Med. Assn.	19.85	
Interest on investments and deposits	3,966.61	
Refund (beneficiary deceased)	50.00	
		$10,258.41
		$12,919.13
Disbursements to beneficiaries		7,840.00
Balance on hand, Sept. 1, 1941		$5,079.13

Respectfully submitted,

E. ROGER SAMUEL, *Treasurer,*
WALTER F. DONALDSON, *Secretary,*
CLARENCE R. PHILLIPS,
HARRY W. ALBERTSON, *Chairman.*

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COMMITTEE ON NECROLOGY

To the President and House of Delegates:

It is our duty as the Committee on Necrology to report the death of one hundred and sixty-three members during the past year. The Great Commander of the Universe has called them to other duties. The lives of many have advanced the standards of medical education and attainment toward a much higher goal. May we the living strive to carry on the high plane already established for us. As the names of our deceased members have been published in THE PENNSYLVANIA MEDICAL JOURNAL and in the 1941 Roster of the society, they will not be mentioned individually in this report. The wish of the committee is that their good works may lay up for them an abundant reward forever.

Respectfully submitted,

W. GILBERT TILLMAN,
FREDERICK E. MURDOCK,
CLYDE R. FLORY,
WALTER F. DONALDSON,
M. FRASER PERCIVAL, *Chairman.*

REPORTS OF SPECIAL COMMITTEES

COMMITTEE ON MENTAL HYGIENE

To the President and House of Delegates:

Your Committee on Mental Hygiene submits the following report of its activities during the year:

We have continued to urge upon the county societies the importance of devoting one meeting during the year to problems of mental health and have offered the services of the committee in providing speakers when this was desired. Various members of our committee have spoken before component county medical societies as well as lay and professional groups in the interests of the program of mental health and mental hygiene. Our work during the current year, however, has been more largely directed toward aid in the National Defense program and analysis of proposed state legislation.

We individually reviewed a number of bills submitted to the 1941 Pennsylvania legislature and commented upon the relation of these bills to the interests of the public and the medical profession.

At the Philadelphia meeting of the State Society in October, 1940, our committee had an exhibit showing the activities of general and mental hospitals in the care of mental illness, and Dr. Baldwin L. Keyes appeared on the general sessions program of the State Society at the request of the committee. We are also preparing an exhibit for the 1941 meeting of the State Society in Pittsburgh.

Several conferences have been attended by members of your committee with kindred lay and medical organizations, looking to an integration of the mental hygiene activities throughout the state, and there has been discussion of the delineation of the field of activity for the various organizations.

The National Defense needs have called heavily upon the services of psychiatrically trained physicians in the commonwealth for services on induction and appeal boards, and it has been a source of satisfaction that the services rendered in the State of Pennsylvania have met with national commendation.

We again note with deep appreciation the co-operation in our program of the officers of the state and component county medical societies.

Respectfully submitted,

Joseph A. Cammarata,
James W. McConnell,
LeRoy M. A. Maeder,
Harold L. Mitchell,
Howard K. Petry, *Chairman.*

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COMMITTEE ON PSYCHIATRIC SERVICES TO THE CRIMINAL COURTS

To the President and House of Delegates:

In its report of 1940 (Pennsylvania Medical Journal, 43:1809, September, 1940) this committee was privileged to announce the creation of fellowships in penal psychiatry as originally proposed in the "Pennsylvania Plan" by the Joint Medicolegal Commission of the Philadelphia County Medical Society and the Philadelphia Bar Association (see editorial, "Intramural Training in Penal Psychiatry," Pennsylvania Medical Journal, July, 1940, pp. 1463-65). This fellowship plan was made possible by a 2-year grant of $14,000 by the Commonwealth Fund in New York, and by the co-operation of the University of Pennsylvania. The training program was inaugurated in the Eastern State Penitentiary, Philadelphia, Jan. 15, 1941, with the appointment of one Fellow, Dr. S. Harvard Kaufman, of Worcester, Mass.

The committee desires to call the attention of the society to the action of the Pennsylvania Bar Association in creating a committee to co-operate with The Medical Society of the State of Pennsylvania. This committee desires to study and develop a co-operative program relative to medicolegal problems. It is conducted under the chairmanship of Dr. M. Louise Rutherford, deputy attorney general.

Through the recommendations of her committee the "Pennsylvania Plan" (*Pennsylvania Bar Association Quarterly,* 12:359-362, June, 1941) was adopted by the Pennsylvania Bar Association at its forty-seventh annual meeting at Bedford Springs, and favorably referred to its component county bar associations of Pennsylvania for approval and promotion. This committee reports that "there is a continuing need for closer co-operation between the medical and legal professions. In the field of criminal justice, perhaps more than in any other legal field, is there a constantly growing need for unity of purpose and action by these two professions." The committee has indicated its interest in collaborating with the medical profession in the following:

1. Proposed amendments to the Mental Health Act.
2. Medicolegal research and fact-finding relative to proposed legislation in the field of penal psychiatry, with special reference to probation and parole.

In the light of the recently proposed parole board by the 1941 Legislature, the action of the Pennsylvania Bar Association is most timely and brings to the medical profession a significant opportunity for co-operative community service.

Your committee wishes to acknowledge the helpful collaboration of the society's Mental Hygiene Committee, under the chairmanship of Dr. Howard K. Petry, and of the Committee on Forensic Psychiatry of the Pennsylvania Psychiatric Society, under the chairmanship of Dr. Baldwin L. Keyes.

Respectfully submitted,

Frederick S. Baldi, Horace V. Pike,
Howard K. Petry, George J. Wright,
Philip Q. Roche, *Chairman.*

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COMMITTEE ON CONSERVATION OF VISION

To the President and House of Delegates:

Your Committee on Conservation of Vision submits herewith its report and recommendations. The meeting of this committee has been held through correspondence, and its members are in accord with the following recommendations:

Conservation of vision begins at the very moment of birth. There have been few cases of gonorrheal ophthalmia neonatorum reported in recent years, yet emphasis needs to be placed on the proven method of prevention; namely, the instillation of 2 per cent silver nitrate within the conjunctival cul-de-sac. If the need is felt that the midwives of a local health district should be thoroughly instructed in the use of this prophylactic, the medical profession should act promptly. Nothing can take the place of 2 per cent silver nitrate.

The family physician should be impressed with the importance of vision and ocular muscular balance of the preschool child. These cases should not be dismissed with the simple statement, "Have the baby's eyes examined," but the family physician should stress consultation with a qualified ophthalmologist. It is during the preschool age that most may be accomplished with amblyopia in the detection of high errors of refraction. These can be diagnosed by the proper use of the mydriatics.

The visual examination of the school child should be made in the first year of school by an ophthalmologist or a specially trained ophthalmologic technician. It is urged that steps be taken so that the visual examination shall include all children in parochial and private schools, as well as those enrolled in the public school system. The State Department of Health has recently suggested that the eye examination be deferred until the fourth grade (age 10 or 11 years) is reached. With this suggestion we are not in accord, since much valuable time may be lost. A careful record should be kept of these annual visual examinations and passed along to succeeding grades. In connection with advice to parents and teachers on the vision of the preschool and the school child, we urge the appearance of a well-trained ophthalmologist yearly at parent-teacher meetings.

We urge the introduction of legislation in Pennsylvania that would prevent the sale and use of b.b. guns and flobert rifles to children under the age of 16 years. These weapons are notorious for the amount of severe ocular injury and the consequent visual loss they cause. The age of 16 years is arrived at and the commonwealth recognizes the right of children of this state to have in their hands at this age a much more lethal weapon; namely, a motor car.

Too little emphasis has been placed on the fact that protective glasses and goggles that do not fit the face of the industrial worker are a nuisance rather than a protection. These can be made to suit the individual face comfortably and be free from steaming at very little additional cost. Men cannot work with efficiency while wearing protective goggles that do not fit.

The eyes of the individual past 40 have not in great part received the attention they should from the profession at large. Glaucoma is a dread disease, frequently developing without symptoms that attract the individual's attention to his eyes save that of gradually failing vision. Then, too often he is told to "go get a pair of glasses!" This may put the patient at the mercy of an individual who is not equipped to make the diagnosis of glaucoma.

This question of preventable blindness from glaucoma of the nonpainful type is clearly one of medicine. The general practitioner should be better educated concerning the signs and symptoms of glaucoma, and we urge therefore that every county medical society, at least once a year, offer a program concerning the conservation of vision with emphasis placed on the question of glaucoma. Should it not be ethical for the ophthalmologist to send his patients a notice at intervals which he deems best urging them to return for an "eye check-up"? Your committee feels that this proposed procedure is in the same category as that of other physicians who suggest the annual physical examination, and suggests that county medical society censors give thought to the answer to this question.

The problem of conservation of vision is one of constant instruction of the laity, of industry, of the legislator, and of the general practitioner of medicine. We sincerely hope that program committees of the component county societies will concur with our suggestion of holding a "conservation of vision" meeting at least once a year.

Respectfully submitted,
John B. McMurray,
Lloyd C. Pierce,
Thomas R. Gagion, *Chairman.*

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COMMITTE ON DEFENSE OF MEDICAL RESEARCH

To the President and House of Delegates:

No formal meetings of the Committee on Defense of Medical Research were held. The chairman of the committee, however, was in communication with its other members concerning possible opposition to medical research. The committee co-ordinated its efforts with those of the State Society's Committee on Public Health Legislation, Dr. C. L. Palmer, chairman. No questions having to do specifically with the Committee on Defense of Medical Research were referred for action. The chairman was in constant touch with Dr. Palmer and made a number of trips to Harrisburg in behalf of the work of the committee. Although perhaps desirable in defense of medical research, it was deemed best not to sponsor new legislation this year in view of the fact that no bills directly inimical to medical research were presented at this session of the legislature. The problem may become a matter of general policy for the State Medical Society at some future time.

Respectfully submitted,
Holland H. Donaldson,
Harvey F. Smith,
J. Parsons Schaeffer, *Chairman.*

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COMMITTEE ON MEDICAL ECONOMICS

To the President and House of Delegates:

Your Committee on Medical Economics has had referred to it (1) a fee schedule for x-ray work in state hospitals; (2) a study of general fees in state-owned hospitals; (3) a study of the National Youth Administration health program; (4) the resolution of Dr. James Z. Appel, of Lancaster County, tendered to the House of Delegates at its previous regular meeting, relative to the employment of specialists by lay organizations supporting special clinics in counties of the State of Pennsylvania; and (5) a request by the president of the State Medical Society that we study the subject of hospital ward insurance.

Fee Schedule for X-Ray Work in State Hospitals

"Our committee having conferred with representatives of the Pennsylvania Radiological Society reviewed the fee bills for x-ray services submitted by (1) the latter society; (2) formerly used by the State Workmen's Compensation Board; and (3) recently announced by the State Welfare Department for use in state-owned general hospitals. No. (3) involved average reductions approximating 50 per cent of the fees provided in (1) and (2).

"Our committee then recommended that representatives of The Medical Society of the State of Pennsylvania and the Pennsylvania Radiological Society confer with representatives of the State Department of Welfare. As a result, Dr. John H. Gemmell, of

Rochester, has reported that the conference resulted in revision of the Welfare Department's x-ray service fee schedule up to the level of the minimum of No. (2), with ward patients in the state's hospitals, however, receiving a 25 per cent reduction.

"The revision is satisfactory to the Pennsylvania Radiological Society and letters have gone out advising the various state hospitals to this effect, hoping that they would be approved by the various boards and become effective Jan. 1, 1941."

Fee Schedules in State-Owned and Operated Hospitals

In a study of individual state hospitals, material in the hands of the chairman of the Committee on Medical Economics indicates several pertinent facts:

1. In at least one hospital both the full-paid and part-paid staff are allowed to compete privately for medical service outside the hospital.
2. Service by the paid staff is not limited to persons who have been rated as unable to pay.
3. In some instances the hospital charges those who are able to pay a fee that includes the doctor's services.
4. The staff is refused the right to make charges to patients who are above the charity level until hospital charges are met.
5. Use of the hospital is limited to the staff only.
6. In another hospital it was found that there is a rotating staff, none of whom is on salary. The staff is paid from fees collected by the hospital and gets nothing from free patients. It is held over from year to year, and apparently is a satisfactory setup.
7. In a third hospital it was found that theoretically on their rotating services private practice is maintained.

Actually, by political interference, hospital service bills are nullified and medical services consequently become unremunerated. No mention was made of fees collected for surgical, laboratory, and x-ray services. These services are rendered by salaried physicians and the hospital presumably collects. This situation may be satisfactory to patients, but is not altogether satisfactory to neighboring physicians in private practice.

Correspondence received by one member of our committee indicates that *the patient must pay his hospital bill before the private physician can collect for professional services,* and it was stated that "one drawback in this is that many patients, when ready for discharge, *either plead poverty* and are not able to pay the hospital bill, *or through political interference the bill is nullified.*"

A report by another member of the committee indicates that in the state hospital in his territory anyone can get medical attention regardless of financial circumstances; further, that this hospital is closed regardless of the qualifications of the physician applying for staff privileges, except for obstetric patients; also, that a state revenue agent, not a social worker, is supposed to determine the patients' ability to pay. Laxness in this procedure means that property owners are just as likely as the more needy to receive free service, if the required political status is satisfactory. The individual answering the questionnaire covering this hospital said: "The state is in the practice of medicine in competition with those licensed by the state to practice."

A copy of the complete schedule of state hospital rates and fees as revised by the Department of Welfare, November, 1940, will be published in the October, 1941, PENNSYLVANIA MEDICAL JOURNAL.

After considerable study* and discussion of this subject and investigation by individual members of this committee, the following resolution was adopted:

"We conclude from this survey that these state hospitals are engaged in the practice of medicine. This we condemn and recommend that immediate steps be taken to remedy this evil."

National Youth Administration Health Program

This whole subject has been very fully reviewed, conferences have been held with representatives of the National Youth Administration, and after a very careful study this committee makes the following recommendations:

1. That the following constitute our findings as a fact-finding body, not as an administrative body.
2. That this committee disapproves of the 9 districts as outlined by the NYA for medical examination purposes. This committee disapproves of examining centers in such districts, but does not disapprove of examining centers in component counties where practicable.
3. That as soon as possible *each* component county medical society set up an NYA committee to work with the NYA district administration.
4. That information be sent out from The Medical Society of the State of Pennsylvania to each component county society, outlining the health program of the NYA and indicating that organized medicine is willing to co-operate.
5. That the component medical societies should arrange for and direct the necessary treatment and arrange for adequate compensation for such corrective work as is indicated as a result of the findings on the physical examination.
6. That the hourly compensation for physicians in Pennsylvania participating in this program be equivalent to the maximum paid in any other state. (At the present time the physicians in Indiana receive $4.00 per hour.)
7. (We insist) that enrollees from each county be examined in that county with full opportunity for the physicians in that county who wish to participate in the program to be enrolled as examining physicians. All other approvals and recommendations made by this committee are hereby declared null and void unless this provision is carried out.
8. That any part or parts of the NYA health plan as submitted to this Committee on Medical Economics that do not accord with the recommendations† of this committee to the Board of Trustees are not approved.

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* At the July 9, 1941, meeting of the Executive Committee of the Board of Trustees it was decided to request the Committee on Medical Economics to continue further its study of the problem involved in the alleged practice of medicine by state-owned and state-operated general hospitals. The committee was authorized to invite representatives of the State Welfare and State Revenue Departments to attend its meeting, together with a representative of the medical staff of each of the hospitals concerned. The committee will make a supplementary report to the 1941 House of Delegates based on the results of its further studies.

† The following is the only subsequent modification:

As a result of a conference held Aug. 14 between the members of the Executive Committee of the Board of Trustees, Chairman Scott of the Committee on Medical Economics, and Drs. Wm. E. Robertson, Arthur P. Hitchens, Thomas B. McKneely, and Mr. John N. Patterson representing the NYA, an agreement was reached whereby examinations of NYA enrollees are to be conducted in all Pennsylvania counties, except that in sparsely settled counties where there is a small number of enrollees to be examined the Board of Trustees consents to examination of such enrollees in the neighboring counties, with permission of the county medical society concerned. These alterations will be covered completely in a supplementary report to be made by the committee to the House of Delegates in session in Pittsburgh.

Employment of Outside Physicians to Conduct Lay-Operated Clinics

At the Oct. 2, 1940, meeting of the House of Delegates of The Medical Society of the State of Pennsylvania, Dr. James Z. Appel, of Lancaster County, tendered a resolution relative to the custom of employing physicians from outside a given county by lay-sponsored clinics.

As a result of action on this resolution, the Board of Trustees requested the committee to investigate, and all component county societies were solicited by a questionnaire as to the situation in their respective localities. The findings from the questionnaires returned follow.

The following county societies report no such activity: Allegheny, Wyoming, Lebanon, Montour, Adams, Tioga, Bradford, Westmoreland, Lycoming, Cumberland, Dauphin, Columbia, Armstrong, Huntingdon, Montgomery, Fayette, Carbon, Lehigh, and Cambria.

The following county societies report lay clinic activity in their counties, but state that it is believed to be advistble to import "outside" physicians to render the service: McKean, Schuylkill, and Warren. These clinics are supported by societies for crippled children and necessitate the employment of "outside" orthopedists.

The following county societies reply that *it is not believed necessary to import "outside" physicians except in certain instances,* and the following excerpts are derived from their reports:

Venango.—"The G. U. Clinic and Tuberculosis Clinic is manned by a physician from Franklin and is a duplication of the G. U. Clinic which has been maintained for years at the Oil City Hospital and has no logical excuse for existence."

York.—Reports a clinic supported by the Rotary Club of York and the Visiting Nurses Association, with professional services supplied from Philadelphia.

Mercer.—Reports numerous clinics, but considers the arrangement satisfactory at the moment.

Lancaster.—Reports a clinic for crippled children with services rendered by a physician from Philadelphia, remunerated by the Lancaster County Society for Crippled Children, and replies as above indicated.

Delaware.—Reports numerous well-baby clinics with satisfactory arrangements.

Blair.—Reports same.

Washington.—Reports a clinic supported by the county commissioners, employing a physician from Pittsburgh, and underlines their reply in the negative to the above-stated question ("Is it necessary?")

Northampton.—Believes it unnecessary to import a physician from Philadelphia in the case of the maternal health clinic at Easton.

Chester.—Reports numerous clinics, some of these employing outside physicians, but with full knowledge and approval of the Chester County Medical Society.

Bucks and *Elk.*—Report clinics, but are noncommittal as to necessity of importation.

Our committee reports as above without recommendations or comment.

Hospital Ward Service Plans

The Committee on Medical Economics does not feel that it is concerned in the establishment of medical ward service plans except insofar as the fee relationship between the subscriber and the physician is concerned. Therefore, we recommend the following general principle which is readily applicable to all of these service plans as well as to full-pay ward patients: "We recommend that patients in hospital wards who are not *charity* patients be subject to charge for professional services by the attending physician."

Respectfully submitted,

HILDING A. BENGS, WILLIAM R. DAVIES,
GEORGE R. HARRIS, FRANK LEHMAN,
FREDERICK O. ZILLESSEN, JAMES F. SCHELL,
JAMES H. CORWIN, LARUE M. HOFFMAN,
KENNETH S. SCOTT, *Chairman.*

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COMMISSION ON CANCER

To the President and House of Delegates:

During the past year important and definitive data have been accumulated in the Division of Cancer Control* of the Department of Health of the commonwealth. These data have given much more accurate information as to the state of affairs in many of the phases of tumor work in Pennsylvania. Much of this material has been distributed throughout the state for the information and use of the various cancer committees and for the various meetings that have been held during the past year.

To mention a few of the important points, it has been found that the mean average delay time between discovery of symptoms and adequate treatment is 15 months. This astounding figure has created considerable discussion and dismay. Obviously, there is vast room for improvement. The most important reasons for this delay are ignorance, carelessness, and indifference to symptoms on the part of patients, but a delay of 3 to 4 months is attributable to physicians in many cases. This in turn is due in 46 per cent of the patients to intercurrent diseases which make the physician hesitate to give radical treatment. These are heart disease, hypertension, kidney disease, diabetes, arteriosclerosis, and a host of other conditions. Obviously, it becomes a matter of fine judgment whether to give radical treatment for cancer in the presence of these and other complications. But some of the delay on the doctor's part is due to "watchful waiting," incomplete examination, failure to use various diagnostic procedures, etc.

In about 70 per cent of cases the diagnosis has been confirmed by microscopic examination, as a biopsy, a surgical specimen, or a postmortem examination. In 30 per cent the diagnosis is purely clinical, made in many instances on the basis of advanced malignancy, usually intra-abdominal, and most often of the stomach. More than one-half of the patients are treated by surgery alone, others by radiation alone, and still others by a combination of the two. Approximately 7 per cent have no treatment of any kind.

In the matter of microscopic diagnosis, disagreement occurs in about 8 per cent of cases. The question of what shall be done about this has not been decided, but is being actively discussed at present. A plan of procedure will be offered, it is hoped, within a short time.

Boxes of slides have been sent to various pathologists of the state. These collections contain typical slides of difficult cases, impossible cases, and some in which the technical work of producing the slides is poor. Lately, pathologists have been invited to visit the Division of Cancer Control in Philadelphia for a week at a time to see at firsthand just what is occurring and to obtain information and slides on cases that may interest them.

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* Terminated July 31, 1941, due to withdrawal of federal Social Security funds.

It is repeated again that identification marks are removed by photostatic copy of the original blanks and these are the ones used for study.

The Cancer Commission expresses appreciation of the vision displayed by the late Secretary of Health, Dr. John J. Shaw, in establishing this department. It expresses its sorrow at his untimely death on June 24, 1941, and records its deep appreciation and great respect for his work which it considers of the highest caliber. In the cancer program of Pennsylvania his loss is a profound one and the Cancer Commission pledges its best efforts to continue what his vision, interest, and energy introduced.

Many suggestions have been made for a closer liaison between members of the Cancer Commission and the chairmen of the cancer committees of the various county medical societies. Much of this depends upon individual interest and enthusiasm. In general it may be said that these relations have been closer this year than previously. In most county medical societies there has been at least one cancer meeting held during the year and in many of them these meetings have proved highly successful. Thus, in Bethlehem, the attendance was larger than at any other meeting of that society for the past 10 years.

The Wainwright Tumor Clinic Association met in May in Philadelphia under the chairmanship of Dr. George M. Dorrance. The attendance was adequate and the program most interesting. A decision has not been made as to the next meeting place.

A full list of the hospitals maintaining tumor clinics is on file in the chairman's office. It is hoped that more institutions will develop this phase of the work during the coming year. No new principles are recommended other than those published in the previous reports. The tumor clinic meeting in the city of Reading held jointly by the various hospitals is recommended for introduction into other communities where facilities can be pooled to everyone's advantage.

Dr. Catharine Macfarlane continues her work on the pelvic examinations of 1000 volunteers. Her reports may be found in the literature, and during the past year she has appeared at many meetings, both lay and medical. (See scientific exhibit at 1941 convention of The Medical Society of the State of Pennsylvania.)

Lay educational work has proceeded apace. The number of people given opportunity for health instruction during the past year runs into the hundreds of thousands. Cancer was one of the subjects especially stressed. Official thanks are tendered to Mrs. Edna Kech of the Division of Health Education of the Department of Health for her excellent work and her cooperative spirit in this important undertaking.

At the annual Cancer Forum held in Philadelphia under the auspices of the Woman's Auxiliary of the Lankenau Hospital Research Institute and District No. 1 of the Pennsylvania State Nurses' Association, some 2000 people were in attendance.

The work of the Women's Field Army is progressing in Pennsylvania. At present there are 930 officers who are volunteer workers interested in spreading knowledge about cancer. Forty-five counties have been organized and there has been close co-operation between the chairman of the cancer committees of the county medical societies and the officers of the Women's Field Army.

The program is an educational one. All scientific presentations have been given by physicians and approved by the chairman of the cancer committee of the county medical society concerned. Talks on cancer have been given at women's clubs and before men's organizations. Women's Field Army officers have arranged programs in high schools throughout the state, at which a physician spoke on the control of cancer. Films were shown and literature distributed. Whenever possible the educational program included the showing of the film "Choose to Live." Over 200,000 pieces of literature on cancer control were distributed throughout the state by the Women's Field Army at various meetings during the year. One big feature this year was the regional assembly held in Philadelphia in which Women's Field Army officers from Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania participated. There was an interesting program with an exhibit for the public.

The task of the officers of the Field Army is that of supervising and directing the educational and enlistment campaigns. The Women's Field Army is a national organization and is being built for permanency, and the women of the state and nation realize that they have a responsibility in helping physicians in this great work.

In conclusion, the following recommendations are presented:

1. Closer contact between county medical society cancer committee chairmen and members of the State Medical Society's Cancer Commission.

2. These contacts are to develop programs based on data from the Division of Cancer Control and on the local needs as unearthed by the various chairmen.

3. Actual working out of nomenclature committees to clarify some of the language of oncology.

4. Continuous encouragement to the formation of tumor clinics.

5. Continuous encouragement to the reporting of tumor cases.

6. Continuous expansion of lay education.

7. Continuous demonstration to doctors of the use and value of various diagnostic instruments, such as cystoscope, bronchoscope, proctoscope, etc.

8. Encouragement in the taking of proper biopsies.

Many more suggestions could be made.

Finally, it might be mentioned that 3 years ago a Department of Oncology was established at Hahnemann Medical College with a head of the department and several associate members. Since the teaching of oncology to medical students comes from many departments and is often disjointed and uncorrelated, this department was inaugurated as an experiment. It has proved quite successful and the Cancer Commission would recommend that similar departments be established in various other medical schools.

Respectfully submitted,

Harry W. Bernhardy,
Walter M. Bortz,
Albert J. Bruecken,
William L. Estes, Jr.,
George W. Grier,
George W. Hawk,
Samuel R. Haythorn,
Lester Hollander,
Martin S. Kleckner,
Nathaniel V. Ludwick,
Catharine Macfarlane,
Louis A. Milkman,
Harvey F. Smith,
Ford M. Summerville,
Stanley P. Reimann, *Chairman.*

COMMITTEE ON TELEPHONE DIRECTORY CLASSIFICATIONS

To the President and House of Delegates:

Your Committee on Telephone Directory Classifications compliments the alertness and vigilance of the membership of The Medical Society of the State of Pennsylvania in bringing to it knowledge of the improper listings of cultists in telephone directories throughout the state. Your committee reports with great satisfaction that the harmonious relations formerly existing with the Bell Telephone Company of Pennsylvania have been maintained throughout the year and grateful acknowledgment is made herewith of their splendid co-operation. The company has been most prompt in lending its aid in purging the directories of those not qualified to be classified as Doctors of Medicine.

Respectfully submitted,
Russel R. Jones,
George M. Piersol,
T. Lamar Williams, *Chairman.*

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COMMISSION ON ACUTE APPENDICITIS MORTALITY

To the President and House of Delegates:

The year ending July 1, 1941, has been the most outstanding since the beginning of our state prophylactic campaign in 1932. Not only have the well-organized districts accomplished a greater amount of work than in other years but some of those which have had difficulty perfecting their organization have made strides which demonstrate that the prophylactic campaign can be made tremendously effective when sufficient enthusiasm and work propel it.

Over 213,000 Pennsylvanians heard the appendicitis laxative-and-delay message and received the appendicitis warning sticker. Of this group, 210,000 were high school students, or more than one-third of the state's junior and senior high school enrollment. To accomplish this work (approximately 275 talks), the commission's chairmen and their committees (300 physicians and surgeons) gave over 1100 hours of their time and traveled over 5100 miles.

The physician and surgeon speakers believe the time and effort spent have been worth while because they report a gratifying reduction in mortality. Dr. Joseph P. Replogle of the Eleventh District writes: "Cases in earlier; smaller percentage of ruptured appendices; mortality reduced; and better records." Dr. William L. Brohm of the Ninth District says: "Mortality definitely reduced in past two years."

A luncheon meeting was held on Oct. 3, 1940, at the Union League during the state convention in Philadelphia. The following commission members were present: Drs. Brohm, Feather, Freed, Gibby, Griffith, Hogan, Kirk, Replogle, Smith, Woolridge, and Bower. The guests included Dr. Walter F. Donaldson, secretary of the State Medical Society, the late Dr. John J. Shaw, Secretary of Health of Pennsylvania, Drs. Francis F. Borzell, George C. Yeager, Edgar S. Buyers, Edward L. Bortz, William G. Turnbull, Jefferson H. Clark, and the late Dr. Robert G. Torrey.

Dr. Hubley R. Owen, director of the Department of Public Health, Philadelphia, addressed the group on "The Rôle of the Department of Public Health in the Philadelphia Appendicitis Campaign." Plans for the year were discussed. The chairman presented each member with a speaker's kit, the "Reduce Appendicitis Mortality" folder, which contained the newly prepared educational material for use in the 1940-41 campaign.

Exhibits.—At the state meeting in October in Philadelphia, the commission had two exhibits. In the scientific division, the commission used an illuminated state map to report the progress of the educational campaign in the 12 districts. In the section open to the public the commission's exhibit was a dramatic presentation of the appendicitis mortality statistics—a memorial to those who had died in 1937 from this disease and, above it, a colored "movie" of a throng of high school boys and girls (typical of America's 10,000,000 high school students) singing as they come over the hill, while the narrator's voice carried the appendicitis message, "They need not die!" This exhibit has unusual possibilities in the campaign, as it can be used at county fairs, home shows, etc. It is short, colorful, and dramatic. It will make an excellent prelude to an educational "movie."

Reduce Appendicitis Folder.—This convenient, easy-to-find blue folder has proved itself a practical working kit for the commission members and their committees. It contains a copy of the plan for reduction of appendicitis mortality, which gives suggestions for getting speaking dates; the report of the state-wide survey on appendicitis mortality; the lantern slide reference chart with all new 1937 statistics; new high visibility appendicitis warning stickers; the district map; the "lyophilize antiperitonitis plasma" statement; the Metropolitan Life Insurance Company's full-page advertisement which asks the public "How innocent is a stomach ache?" and answers its own question by quoting the report of the state-wide survey. These folders with their pertinent appendicitis statistics were sent to commission members and to each of their county chairmen; the 181 approved hospitals which had co-operated in the state-wide survey; and to numerous state and national public health officials. Letters of acknowledgment on file confirm the commission's evaluation of this educational material.

Field Worker.—Miss Adeline Stevenson worked throughout the state for 11½ months and visited all but 3 districts, the sixth, ninth, and eleventh. She was unable to reach these 3 districts because of illness which necessitated her giving up the work. While some of her visits were just long enough to make preliminary arrangements, others were extended over a period of from 6 to 8 weeks to work the district thoroughly. In each district visited she reported to the chairman and together they planned her activities in that district. This included maintaining close contact with the county medical societies, boards of education, hospital staffs, nurses' associations, parent-teacher associations, women's clubs, and other civic organizations. She endeavored to obtain speaking engagements for the chairman and his committees; to help establish peritonitis blood donor clinics at hospitals; to contact druggists to get them to use appendicitis warning stickers on all laxative packages and to use the adcaster window display. She also tried for showings of the appendicitis lantern slides and the adcaster in "movie" theatres and county fairs.

The chairmen report that Miss Stevenson's work stimulated interest and promoted the campaign in the districts visited. She was able to relieve them of many time-consuming but necessary contacts.

Although the "state antiperitonitis plasma bank" is in its infancy, it is already proving a definite aid in the treatment of appendicitis-peritonitis cases. We have had several emergency calls for antiperitonitis plasma (reports of these cases are on file) and have been able to supply them, mainly because of the large amount of blood we have collected in Philadelphia where a regular schedule of donor clinics has been established in some hospitals. These calls emphasize the necessity of establishing the "state antiperitonitis plasma bank," built up by retaining in the central bank one-tenth of all the plasma lyophilized. Any hospital in the state can then call upon the central bank when its supply is exhausted, if it will agree to replace the plasma at a later date. Donor clinics can be safely held every 4 months by calling on the same recovered patients. When the purpose of the clinics is explained to the recovered appendicitis-peritonitis patients, they are interested and willing to donate their blood to this life-saving plasma bank.

Five hundred c.c. of blood withdrawn from a patient who has recovered from appendicitis-peritonitis will yield approximately 250 c.c. of lyophilized plasma. If a hospital will estimate from the records the approximate number of such patients treated in a year, it can very easily determine the amount of blood necessary to provide sufficient plasma to meet its needs. The most seriously ill patient seldom requires more than 750 c.c., and very often 250 c.c. when given at the right time is sufficient. The supply of plasma in the state bank is of necessity small, since only 5 of the 12 districts have been asked to hold blood donor clinics to secure the plasma for lyophilization. This is as we had planned it, starting the work in a small group of adjoining districts where the groundwork and plans for its extension throughout the state could be worked out. The commission, in the report of the first state-wide survey (May, 1940, Pennsylvania Medical Journal), outlined its objectives: to continue not only its prophylactic campaign but to strive for better management of spreading peritonitis. The commission, therefore, must look to the physicians, surgeons, and pathologists for co-operation in this phase of its work and urgently requests them not only to supply the antiperitonitis blood for lyophilization when asked to do so but also to use the antiperitonitis plasma, following the plan of treatment which accompanies it.

The high school talks are the backbone of the prophylactic campaign. The boys and girls get the appendicitis warning message when it will do the greatest good, and they in turn carry the laxative-and-delay warning home to their parents and the rest of the family. This has been proven again and again in the experience of nearly every member of the commission and the committees—fortunately, more effectively than in the recent case reported to us—a boy, brought to the hospital with acute appendicitis, and accompanied by his mother who was crying. She had given the boy a laxative and wanted to know whether the laxative would kill him.

Among the high lights of the year's work which accelerated the prophylactic campaign were the following: In Philadelphia, the meeting called by the Director of Public Health, Dr. Hubley R. Owen, at the beginning of the school term, of all the physicians, nurses, and hygiene teachers of all the junior and senior high schools of the city to hear the latest facts of the appendicitis mortality; in Pittsburgh, the direct contact by Chairman John P. Griffith with the superintendents of the city and county schools, who scheduled the appendicitis talks for the year; in Williamsport, the arrangement which Chairman Charles L. Youngman made with the superintendent of schools to place the appendicitis warning sticker on all report cards, thus giving the message to children and parents at recurring periods throughout the year; in Reading, Harrisburg, Wilkes-Barre, Lancaster, Chester, Pottsville, Quakertown, Williamsport, and Philadelphia, the blood donor clinics (30 in all) arranged by Chairmen Freed, Smith, Gibby, Kirk, Youngman, and Bower, from which were collected, lyophilized, and distributed to the co-operating hospitals over 75,000 c.c. of antiperitonitis plasma for the treatment of appendicitis-peritonitis; and, of course, in 9 districts, the field workers' activities which stepped up the campaign in many of those districts.

First Councilor District — Philadelphia County — Dr. John O. Bower, Philadelphia.

There are 113 high schools in the district with 132,796 students. Forty high schools were contacted, 63,093 students addressed, and "warning stickers" distributed; also 2 lay organizations—450 adults. There are 12 antiperitonitis blood serum donor clinics. The committee in this district gave 90 hours' time to this work and traveled 185 miles in visiting the various high schools, etc.

Second Councilor District — Berks, Bucks, Chester, Delaware, Lehigh, and Montgomery Counties—Dr. Cecil F. Freed, Reading.

There are 124 high schools in the district with 37,420 students; 20,000 students were addressed and "warning stickers" distributed. There are 7 antiperitonitis blood serum donor clinics. The committee in this district gave 90 hours' time to this work and traveled 750 miles in their visitations.

Fourth Councilor District—Columbia, Montour, Northumberland, Schuylkill, and Snyder Counties — Dr. Charles V. Hogan.

There are 47 high schools in the district with 29,494 students. Ten high schools were contacted, 4000 students addressed, and "warning stickers" distributed; also 5 lay organizations—400 adults. There are 5 antiperitonitis blood serum donor clinics. The committee gave 50 hours' time to this work and traveled 112 miles.

Fifth Councilor District — Adams, Cumberland, Dauphin, Franklin, Fulton, Lancaster, Lebanon, Perry, and York Counties—Dr. Harvey F. Smith.

There are 119 high schools in the district with 39,487 students. Fifteen high schools were contacted, 11,112 students addressed, and "warning stickers" distributed; also 14 lay organizations—795 adults. There are 2 antiperitonitis blood serum donor clinics.

Sixth Councilor District — Blair, Centre, Clearfield, Huntingdon, Juniata, and Mifflin Counties—Dr. J. Hayes Woolridge.

There are 69 high schools in the district with 26,483 students. One high school was contacted, 400 students addressed, and "warning stickers" distributed. The committee gave 10 hours' time to this work and traveled 75 miles in visitations.

Seventh Councilor District — Cameron, Clinton, Elk, Lycoming, Potter, Tioga, and Union Counties. — Dr. Charles L. Youngman.

There are 69 high schools in the district with 15,434 students; 12,500 students were addressed and "warning stickers" were distributed. There is one antiperitonitis blood serum donor clinic.

Eighth Councilor District—Crawford, Erie, Forest, Mercer, McKean, and Warren Counties—Dr. Harry C. Winslow.

There are 96 high schools in the district with 31,124 students. Three high schools were contacted, 700 students addressed, and "warning stickers" distributed.

Ninth Councilor District—Armstrong, Butler, Clarion, Indiana, Jefferson, and Venango Counties—Dr. William L. Brohm.

There are 93 high schools in the district with 25,611 students. Sixteen high schools were contacted and 85 secondary schools; 20,000 students were addressed and "warning stickers" distributed, also 22 lay organizations. The committee in this district gave 350 hours' time to this work and traveled 3500 miles.

Tenth Councilor District—Allegheny, Beaver, Lawrence, and Westmoreland Counties—Dr. John P. Griffith.

There are 184 high schools in the district with 147,737 students. Twenty-nine high schools were contacted, 54,702 students addressed, and "warning stickers" distributed. The committee in this district gave 166 hours' time to this work.

Eleventh Councilor District—Bedford, Cambria, Fayette, Greene, Somerset, and Washington Counties—Dr. Joseph P. Replogle.

There are 118 high schools in the district with 51,857 students. Six high schools were contacted, 2500 students addressed, and "warning stickers" distributed.

Twelfth Councilor District—Bradford, Luzerne, Sullivan, Susquehanna, and Wyoming Counties—Dr. Herbert B. Gibby.

There are 84 high schools in the district with 45,966 students. Thirty-four high schools were contacted, 20,500 students addressed, also 250 adults, and "warning stickers" were distributed. There is one antiperitonitis blood serum donor clinic. The committee in this district gave 100 hours' time to this work and traveled 280 miles in their visitations.

The commission's plans for 1941-42 fall into two well-defined lines. In the districts where the educational program has not kept pace, and there are several, the commission will concentrate on its first line of defense, the high school students. The commission has been fortunate in new appointments to two of these districts, and with the help of the field worker looks forward to rapid progress in the educational groundwork.

In the districts where the high school educational program is well organized, the commission will extend its efforts (1) to reach the adult groups through the various professional and civic organizations, and (2) to develop blood donor clinics for antiperitonitis plasma for the treatment of patients suffering from appendicitis-peritonitis (ruptured appendices, etc.)

In all the districts the commission will endeavor to extend its plan inaugurated last year—have an appendicitis committee in every county medical society. Such a network of appendicitis committees functioning throughout the state will, the commission anticipates, arrange appendicitis-peritonitis programs for society meetings, hospital staff meetings, nurses' alumnae, as well as druggists' organizations, and obtain the active co-operation of the druggists themselves. In some districts these committees have been in operation since the prophylactic campaign was started.

The commission is grateful to the Board of Trustees for the support which made the accomplishments reported herein possible. At the same time, the commission bespeaks a continuance of the board's interest and the year-round support and active assistance of the incoming president and the members of the 1941 House of Delegates, so that at the end of 1941-42 we can say of nearly all our districts "Cases in earlier; smaller percentage of ruptured appendices; and mortality definitely reduced."

The commission's special thanks go to Dr. Walter F. Donaldson, secretary, who has been most understanding, helpful, and co-operative throughout our entire campaign.

The chairman's personal thanks go to the commission members and their committees who have, in spite of the additional burdens the present emergency has placed upon them, carried out the program, and who have responded with enthusiasm when called upon for extra effort.

Respectfully submitted,

Cecil F. Freed,
John O. MacLean,
Charles V. Hogan,
Harvey F. Smith,
Norris J. Kirk,
J. Hayes Woolridge,
Charles L. Youngman,
Harry C. Winslow,
William L. Brohm,
John P. Griffith,
Harry E. Feather,
Joseph P. Replogle,
Herbert B. Gibby,
John O. Bower, *Chairman.*

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COMMISSION ON MATERNAL WELFARE

To the President and House of Delegates:

The Commission on Maternal Welfare of The Medical Society of the State of Pennsylvania herewith submits its report for the past year.

We met during the annual session of the State Society at Philadelphia last October and those in attendance voiced their opinions as to our functions for the year. Dr. Larkin suggested and then volunteered to make a study of the intern problem in hospitals, especially the smaller hospitals, or at least those hospitals not connected with teaching institutions. This study was exhaustive and demonstrated the need of the smaller hospitals for a new setup requiring a two-year internship instead of the usually accepted one year's rotating service. Great improvement may come from this work when we return to normal conditions and when the young men can serve proper and thorough internships undisturbed by the necessity for entering military service.

Of last year's intern graduates, Dr. Larkin's survey showed that approximately 100 from the various medical schools were already members of the Reserve Officers Corps. The Selective Service regulations require only one year's internship, hence it was thought inadvisable at present to carry on this matter of a two-year service, although it was definitely shown by Dr. Larkin that a two-year tour of intern service would be of greater value to the intern and such a scheme would give the smaller hospital a greater opportunity of obtaining a satisfactory and necessary number of interns, which under present conditions is very difficult to accomplish.

The question of obstetric residencies was brought up, but again we ran into the military service problem and again "for the good of the cause" we reluctantly step aside to bide our time until more nearly normal conditions return.

Since our last report we have been bereft of the invaluable co-operative service of the late Dr. John J. Shaw, Pennsylvania's Secretary of Health, who was most interested in the work of our commission and was heartily interested in aiding and abetting our efforts. The acting Secretary of Health, Dr. Alexander H. Stewart, and the director of the Maternal and Child Health Division of the State Department of Health, Dr. Paul Dodds, are fully cognizant and in complete understanding of our problems.

The 4 outstanding causes of maternal deaths continue to maintain their relative positions as of the preceding year, viz., the toxemias first; abortions second; obstetric hemorrhages third; and puerperal sepsis fourth.

Pennsylvania's maternal death rate in 1940, when figures are completed, will be approximately 3 per 1000 live births. Thus, since the inauguration of our commission in 1934, we have seen a gradual but steady and encouraging decline from 5.8 per 1000 live births to 3 per 1000.

The incidence of maternal deaths in which a cesarean section was performed continues to show an alarming picture. The apparent increase may arise from the new death certificates bearing the question, "Was an operation performed?" The incidence of maternal deaths in which a cesarean section was part of the history will show a frequency of at least 18 per cent. Our survey is showing that the vast majority of these cesarean section deaths are in those patients on whom section is performed as an emergency procedure, and on whom the old classical type of operation has been performed. The low cervical operation continues to show a very low rate of mortality, being practically nil when adopted as an elective procedure. Again it is demonstrated very forcibly that the classical section is most dangerous as an emergency operation.

As regards the increasingly high incidence of the toxemias, it is again demonstrable that there is a woeful lack of understanding on the part of the lay public in seeking adequate ante partum care. A large percentage of these deaths occurred in women who were moribund when a physician was first called; a still greater percentage of cases is showing definitely that no ante partum care had been received.

Our problems, hence, remain practically the same, viz., contact consistently the medical profession and keep insisting more strenuously than ever that every expectant mother receive adequate maternal care in all its various aspects.

We respectfully submit this report for your favorable consideration and with the assurance that our efforts will be exerted as fully during the coming year, all to the end that child-bearing may become more than ever a safer process, thus adding our bit to the matter of national defense.

Respectfully submitted,

Kenneth L. Benfer,
John J. Bernhard,
Herbert A. Bostock,
Joseph H. Carroll,
Raymen G. Emery,
John C. Hirst,
Joseph J. Kocyan,
Walter J. Larkin,
Roy E. Nicodemus,
John B. Nutt,
Howard A. Power,
Charles G. Strickland,
John W. Welsh,

James S. Taylor, *Chairman.*

COMMISSION FOR THE STUDY OF PNEUMONIA CONTROL

To the President and House of Delegates:

While the mortality rate from pneumonia in Pennsylvania still remains somewhat higher than it should be, there has been a striking decline in the past 5 years, during which time the organized medical profession has carried on its intensive campaign for the instruction of the practicing physician in the latest methods of diagnosis and treatment.

The death rate from pneumonia will be reduced to a minimum only when the practicing physicians are capable of making the correct diagnosis very early in the disease and following this promptly with adequate administration of modern therapy. That the members of the organized medical profession in Pennsylvania have responded brilliantly to their opportunities is manifest in the considerable reduction in the mortality rate from pneumonia in this state.

The Commission for the Study of Pneumonia Control held 2 meetings during the past year. The first was held in Philadelphia on Oct. 2, 1940. The second meeting was held in Harrisburg, Mar. 11, 1941. Both of these meetings were held in conjunction with representatives of the State Department of Health. At these meetings a résumé of the work of the commission was offered and discussions took place regarding possible measures for further enlisting the co-operation of doctors in the collection of pneumonia statistics.

In order to have a clearer understanding of the extent of the pneumonia problem in Pennsylvania, every pneumonia case, regardless of the place of treatment, in the home or hospital, in private or hospital staff practice, should be reported promptly and directly to the State Health Department, Division of Pneumonia Control, in Harrisburg. The percentage of cases reported during the past year has fallen slightly under that of the preceding year; nevertheless, close to 92 per cent of the cases that were treated with state-distributed therapeutic agents have been duly reported.

At this writing (June) 10,250 clinical cards have been turned in to the Division of Pneumonia Control for the past year. On a rough estimate this represents probably 35 per cent of the pneumonia cases occurring in Pennsylvania.

The mortality rate was approximately the same as the preceding year, that is, slightly over 10 per cent. This rate shows no variations from the use of sulfapyridine or sulfathiazole.

Complications from pneumonia in Pennsylvania, according to available statistics, have been present in approximately 10 per cent of the entire number of cases studied. Empyema was present in 1.7 per cent of the cases. Pleural effusion and otitis media are the most common complications.

In more than 50 per cent of the fatal cases studied there was an associated life illness present, such as heart disease. This fact, if given consideration, would further reduce the pneumonia mortality rate in Pennsylvania.

The type distribution of pneumococcal infections has been the same as the previous year. Type 1 is most common; type 3 ranks second, and type 2, third. These 3 types make up about 50 per cent of all type cases. Toxic reactions from the use of various therapeutic agents have been less troublesome with the use of sulfathiazole than following the use of sulfapyridine.

Sulfadiazine is being carefully studied and according to the late Secretary of Health, Dr. John J. Shaw, will be made available to the doctors throughout the state as soon as it is released by the Federal Administration. The specific results in the field of pneumonia control in the Commonwealth of Pennsylvania are due to the combined efforts of the doctors of the Keystone State, who have been working in close co-operation with Dr. Shaw and Dr. Dale C. Stahle, head of the Division of Pneumonia Control.

The people of the commonwealth can experience a justified pride in the efficiency with which the medical profession and state health officials are conducting the campaign to reduce the ravages from pneumonia.

Respectfully submitted,

Leon H. Collins,
Harrison F. Flippin,
D. Sergeant Pepper,
Hobart A. Reimann,
George E. McGinnis,
Patrick J. McDonnell,
Wendell J. Stainsby,
John V. Foster, Jr.,
Russell H. Barnes,
Patrick E. Biggins,
George F. Stoney,
Frank A. Pugliese,
George J. Kastlin,
Wm. W. G. Maclachlan,
James M. Strang,
Bernard J. McCloskey,
Edward W. Bixby,
Frederic C. Lechner,
Edward L. Bortz, *Chairman.*

(Each member represents his councilor district.)

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COMMISSION ON DIABETES

To the President and House of Delegates:

The Commission on Diabetes submits its report on its activities during the past year. The commission members and the chairman are grateful for the wholehearted support of the Board of Trustees and the advice of the officers of the State Society, especially Drs. Borzell and Donaldson.

The work of the commission moves slowly since plans must be fitted to the fundamental difficulties. The primary purpose of this commission is to reduce the mortality and morbidity rates of diabetes mellitus in our state. It may prove difficult and expensive to persuade busy doctors to seek or accept postgraduate instruction in the care of diabetes and then to reorganize their office routine sufficiently to execute the necessary examinations. The results of universally good diet and insulin therapy will not be demonstrated until each small community has at least one such physician's office. This type of essential professional service cannot be rendered by a few specialists located in the larger centers of population. There is a more certain and less expensive way to accomplish a proper spread of trained physicians. The deans and curriculum committees of the various medical schools should be asked to reorganize the instruction in metabolic diseases so that more susceptible students will be exposed to the attraction of metabolic medicine as an important foundation to the practice of good medicine.

It is unfortunate that diabetes is now rated as a minor subject. Recent statistics place it near tuberculosis as a cause of death and much higher than the other causes of death that are now receiving a great deal of publicity. The hospitals and other institutions in the State of Pennsylvania do not have sufficient laboratory facilities to perform all of the examinations requisite for the present number of diabetics, if all such were receiving ideal medical care. If we accept the statement of Dr. Joslin that 50,000 new cases of diabetes will develop in the United States this coming year, our quota will be from 2500 to 4000 cases. Each new case will live 2 to 15 years. Thus, we are accumulating more and more diabetics each year.

The education of laymen, relatives of diabetics, and the patients themselves is important and must be carried forward. The press and radio are the mediums of choice at the present time. Local lay meetings sponsored by organizations, such as the woman's auxiliary to the local medical society, are an excellent method of reaching small groups. Motion pictures are the best form of presentation and the commission policy on the distribution of literature will be found liberal if specific requests are made and we can be assured that the material will be used.

The organization of the commission remains essentially the same as the original appointments. We are glad to welcome two new members, Drs. L. Dale Johnson, of Connellsville, and William J. Armstrong, of Butler. We feel that each councilor district is in capable hands. As opportunity and experience increase, the detail work of the commission with county medical societies and other reorganized groups should move forward smoothly.

The high lights of the 1940 report should be reviewed. The Diabetes Primer at that time was moving into completion. The motion picture in color was ready for use and two exhibits at state society meetings were successful. The collected papers from two state society convention lecture rooms are on hand, and as time and opportunity become available for editing and arranging this vast material, it will be a fruitful source of publication.

The primer is now completed and in the hands of the printer. Each subject has been written by a Pennsylvania doctor and is authoritative. We believe it will be of great assistance to doctors, nurses, dietitians, students, and intelligent laymen. The material is simplified as much as possible and arranged in handbook style. We have received several thousand written requests for this book, and it will be available within a few weeks. All additional requests will be filled as soon as possible. No charge will be made for the primer if it is requested by physicians or representatives of responsible lay groups.

A comprehensive and helpful lending Lantern Slide Library is now available for all physicians who are preparing talks on diabetes. These lantern slides are available either as a loan or copies may be purchased at a small cost per slide for personal collections.

The motion picture prepared for our State Society at the Geisinger Memorial Hospital by Drs. Wendell J. Stainsby and Belford C. Blaine has had an extensive circulation throughout the state. It is now being altered slightly to facilitate its showing and a few scenes will be added, particularly children's activities, to emphasize the normal life of the diabetic child. We hope that there will be many requests during the coming year.

The commission sponsored a scientific exhibit at the recent A. M. A. meeting in Cleveland. We are very grateful to a very active committee which made this exhibit possible. The personnel of the committee is as follows: Drs. Angelo L. Luchi, Wilkes-Barre; George F. Stoney, Erie; John O'Donnell and Leon Smelo, Pittsburgh; Joseph T. Beardwood, Jr., and W. Wallace Dyer, chairman, Philadelphia.

The purpose of the exhibit was a demonstration of the work that has been accomplished and planned in Pennsylvania by The Medical Society of the State of

Pennsylvania. The committee exhibited the commission's primer and hospital forms which have been approved. We were pleased that there were many requests for copies of both of these exhibits. The remainder of this exhibit consisted of a copy of the new seal of the commission, statistics on the mortality of diabetes in the City of Philadelphia, as painstakingly developed by Dr. E. Roland Snader's subcommittee, a summary of the statistics on diabetes in the State of Pennsylvania, a study of the adaptation of the diabetic diet to various nationalities in our population, and a paraphrase of the Decalogue and Beatitudes.

With the approval of the Board of Trustees we are co-operating with the Metropolitan Life Insurance Company in a state-wide campaign of public instruction against diabetes. The commission is assisting when possible in scheduling and furnishing speakers for meetings. We acknowledge deep appreciation of the help of their Mr. H. H. Marks for his review of the statistical data of diabetes in Pennsylvania.

The commission will welcome visitors to its 1941 scientific exhibit at the Pittsburgh session and will have at least one paper on the scientific program.

We shall continue our efforts to increase and spread interest in the subject of diabetes. Undergraduate teaching is now being surveyed by at least one of the medical schools in our state. Every effort is being made to continue the interest of the county medical society program committees in the subject. We hope that every county society in the state will give at least a portion of one meeting to diabetes mellitus. The motion picture is available to all meetings, lay or otherwise. Copies of the primer, or copies of the Beatitudes and Decalogue are available upon request.

We salute the formation of the American Diabetes Association. Its first clinical meeting was very successful, and it is apparent that the diabetics of America may also soon obtain better medical management.

The Commission on Diabetes has been blessed with splendid co-operation and esprit de corps from its members during this year. The work has been a pleasure to all. The entire commission expresses thanks to the Board of Trustees and the officers of our State Society for their continued splendid support.

Respectfully submitted,

JOSEPH T. BEARDWOOD, JR.,
FRANCIS D. LUKENS,
JAMES A. SHELLY,
PAUL F. POLENTZ,
BELFORD C. BLAINE,
THOMAS J. MCGURL,
CARL E. ERVIN,
CHARLES R. REINERS,
LOUIS E. AUDET,
GEORGE F. STONEY,
WILLIAM J. ARMSTRONG,
THOMAS T. SHEPPARD,
L. DALE JOHNSON,
ANGELO L. LUCHI,
J. WEST MITCHELL, *Chairman.*

(Each member represents his councilor district.)

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COMMITTEE ON TUBERCULOSIS

To the President and House of Delegates:

Your Committee on Tuberculosis has continued its policy of establishing a better working relationship between the medical profession and those official and voluntary organizations devoted to the control of tuberculosis. While tuberculosis as a disease is essentially a medical problem, its economic and communicable aspects are equally important when it is considered from a public health point of view. A successful program for the eradication of the disease must provide a basis for co-operation of all interested groups. Leadership for the program necessarily rests with the official health agency. The health department cannot function effectively, however, without the co-operation of the medical profession.

The State Health Department of Pennsylvania through its Bureau of Tuberculosis Control has formulated a comprehensive plan of activities with which we are in full accord. During the past year provision for the hospital care of tuberculous patients has been much improved. The Secretary of Health has announced an increase of 980 beds in the 3 state tuberculosis hospitals. This means that beds available under the control of the Department of Health have been increased to 3436. Pennsylvania, according to the figures recently published, now has a total of 6867 beds available for tuberculous patients. In 1940 there were 3651 deaths from tuberculosis in the state. This makes an average of 1.8 beds for each annual death, which is still slightly below the 2 to 1 ratio considered desirable by public health authorities.

The Postgraduate Institute for negro physicians inaugurated in Pittsburgh last year was successfully repeated in Philadelphia this spring. It is hoped that this method of postgraduate instruction will become an annual affair, with the courses alternating in the eastern and western ends of the state. Other educational activities have consisted of talks, demonstrations, and the showing of motion pictures to both lay and professional groups.

A joint scientific exhibit by your committee and the Pennsylvania Tuberculosis Society will be shown in Pittsburgh at the annual meeting of the State Medical Society.

Respectfully submitted,

CHARLES A. HEIKEN,
JOHN H. BISBING,
ROYAL H. MCCUTCHEON,
SYDNEY J. HAWLEY,
CHARLES C. CUSTER,
*J. PAUL FRANTZ,
ROSS K. CHILDERHOSE,
VICTOR M. LEFFINGWELL,
ELMER HIGHBERGER, JR.,
OTHELLO S. KOUGH,
CHARLES H. MINER,
FRANK W. BURGE,
C. HOWARD MARCY, *Chairman.*

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COMMITTEE ON DEAFNESS PREVENTION AND AMELIORATION

To the President and House of Delegates:

The chairman of your committee reports the contemplation of the fusing with this committee of an advisory committee of otologists working in co-operation with the State Department of Public Instruction. The chairmanship of the two committees is identical, and the problem to be undertaken is medical care of the school children found to be hard of hearing. This is naturally the next step to the discovering of these children which has taken place by reason of nationwide testings of school children. The planning for the work is well under way and will probably lead to a "trial balloon" of medical care for these cases in one of the smaller cities in the state. An interim progress report will be submitted.

Respectfully submitted,

JAMES E. JAMES,
CLINTON J. KISTLER,
THOMAS B. MCCOLLOUGH,
DOUGLAS MACFARLAN, *Chairman.*

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* Deceased.

COMMITTEE ON WORKMEN'S COMPENSATION LAWS

To the President and House of Delegates:

Your committee, realizing that the Workmen's Compensation Law in the 1941 regular session of the legislature would be a controversial political subject, presented through the chairman of the state society's Committee on Public Health Legislation two problems in which the medical profession was presently interested. The one was to make the physician a party of interest; the other, to extend the time of medical care. These were accepted by the framers of many of the bills. However, since the act became one of the heated subjects that prolonged the duration of the session, the committee in accord with the Committee on Public Health Legislation believed that it was not prudent to press our claim too strongly at this session. The legislature adjourned without any action on the Workmen's Compensation Act and our prestige was not jeopardized in the political intrigue.

John R. Conover,
Herbert B. Gibby,
George R. Sippel,
Bernard P. Widmann,
Augustus S. Kech, *Chairman.*

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COMMITTEE ON NUTRITION

To the President and House of Delegates:

Your Committee on Nutrition submits the following report of its activities and projects:

At our organization meeting a long-time program was adopted which aims to disseminate the newer knowledge of nutrition, with special reference to the medical aspects of nutrition to the general practitioner, by means of: (1) scientific exhibits, (2) symposia, (3) speakers' bureaus, (4) motion pictures and similar methods, and (5) publication of bulletins. It is planned to have a scientific exhibit and symposium on nutrition and nutritional deficiency at the ninety-first annual session of the State Society in Pittsburgh. Bulletins and speakers' bureaus and other plans are in the process of development.

Although the committee has been primarily engaged in organization procedures, its members or the chairman have been invited to address 7 county medical societies, 3 industrial groups, and 3 meetings of the Institute of Nutrition. In May a letter was addressed to the president, secretary, editor, and chairman of the program committee of the county medical societies proffering speakers on medical aspects of nutrition, with satisfactory response.

To our knowledge, we have the first state medical society committee on nutrition. Several county medical societies now have active committees on nutrition, the Philadelphia County Medical Society being the first. The Committee on Nutrition hopes to establish similar committees in all the county medical societies throughout Pennsylvania.

Our committee's work has been further recognized by various organizations in that its chairman, together with President Borzell, were elected members of the Pennsylvania Nutrition Council for Defense. Your chairman was also appointed delegate to the National Nutrition Conference for Defense, and was invited to address the Fifth Annual Spring Clinic of the Ingham County Medical Society in Michigan, the Burlington and Cumberland County Medical Societies of New Jersey, the Cooper Hospital staff, Camden, N. J., the Pennsylvania State Dietetic Association, and the Pennsylvania State Dental Society on various phases of medical aspects of nutrition.

As a further expansion of its program, the committee hopes to furnish a curriculum for refresher courses on nutrition and a symposium on nutrition and nutritional deficiency; encourage hospitals to establish departments of medical nutrition and schools of medicine to provide means of teaching the practical application of medical nutrition; establish closer co-operation between medical and public health groups and other agencies concerned with nutrition for more effective local action; and bring representation of its members on all state and local nutrition committees and take an active part in organizing, sponsoring, and co-operating in nutrition programs.

Respectfully submitted,

Isidor S. Ravdin, Russell S. Anderson,
Harvey H. Seiple, Joseph H. Barach,
Paul C. Shoemaker, Belford C. Blaine,
Harold L. Tonkin, William M. Donovan,
Sergei V. Algin, John M. Higgins,
Horace B. Anderson, Augustus S. Kech,
Herbert T. Kelly, *Chairman.*

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COMMITTEE ON GRADUATE EDUCATION

To the President and House of Delegates:

A meeting of the Committee on Graduate Education was held in Harrisburg on Feb. 5, 1941, attended by 8 of its 12 members. A new type of graduate education activity was discussed, the so-called "circuit rider" plan, which seemed more desirable than the "seminar" plan for the sparsely settled districts distant from large cities and medical centers.

The "circuit rider" plan provided for an instructor in internal medicine, another in pediatrics, and another in obstetrics and gynecology, the program and schedule being arranged to cover important subjects in these fields and include 3 to 6 sessions or meetings, to be held at convenient distances within the "circuit," the program to consist of a lecture or didactic hour to be followed by a clinic period in accordance with the material presented for discussion by the physicians forming the group.

The usual seminar plan was also offered to county medical societies desiring this type of graduate instruction, and a communication with the following questionnaire was addressed by the committee to representative officers and the scientific program chairman of each component county society:

Do you wish to use the Seminar Plan in 1941?

Are you interested in the Circuit Rider Plan?

Replies in the negative to questions (1) and (2) were received from the following county medical societies: Berks, Blair, Bradford, Cambria, Centre, Cumberland, Luzerne, Mercer, Susquehanna, Venango, Washington, Wayne-Pike, and Wyoming.

The following reported plans for seminar courses under way: Fayette, Lehigh, Lycoming, McKean, Montour, Northumberland, Schuylkill, Warren, and York-Adams.

The following stated that their members look forward to attending the annual 5-day Postgraduate Institute of the Philadelphia County Medical Society: Chester, Delaware, and Montgomery County Medical Societies.

A number of the smaller county societies which previously united with adjoining counties in a combined annual postgraduate seminar gave as a reason for not participating this year the fact that several of their members are absent in national military service.

One county medical society during the past year incurred a deficit in carrying out its seminar courses, which was paid by the State Society.

The committee wishes to express appreciation for the assistance given by the teachers in the medical schools of Pennsylvania and elsewhere and for their co-operation in our graduate education plan.

Respectfully submitted,

Erwin D. Funk,
Louis J. Hampton,
Mark K. Gass,
John L. Atlee, Jr.,
Lorenzo G. Runk,
Wilbur E. Turner,
T. Palmer Tredway,
Kelse M. Hoffman,
William A. Bradshaw,
George S. Enfield,
Donald Guthrie,
Charles L. Brown, *Chairman.*

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COMMITTEE ON PHYSICAL THERAPY

To the President and House of Delegates:

The Committee on Physical Therapy has made an effort to secure recognition for the subject on the programs of the various scientific sections of the society. The present chairman has been active for only a short period of time and it has not been possible to carry out a full program.

We have, however, succeeded in presenting papers on physical therapy before the following local medical societies:

Feb. 15, 1941: A talk was given over Radio Station WDAS, under the auspices of the Philadelphia County Medical Society, on the subject of "Physical Therapy."

Apr. 17, 1941: A paper on "Physical Therapy" was given before the North Branch of the Philadelphia County Medical Society.

Apr. 19, 1941: Three papers were read before the Orthopedic Club on "The Value of Physical Therapy in Orthopedic Surgery."

Apr. 24, 1941: A paper on "Physical Therapy" was given before the South Branch of the Philadelphia County Medical Society.

In addition to the above, several papers were read before neighboring county medical societies and national organizations.

The committee is also endeavoring to secure material for an exhibit in the scientific section of the 1942 meeting of the society. It is quite possible that we will be able to have a better representation next year when the chairmen of the various program committees can be consulted before the final programs have been made up. This has been the difficulty in securing papers for this coming session.

The committee also has under consideration certain other phases, such as irregular practitioners and the advertising to the laity of certain types of electrical apparatus for home treatment. We hope to be able to present something concrete on this subject in the near future.

Respectfully submitted,

Clayton W. Fortune,
Harold W. Jacox,
William T. Johnson,
Guy H. McKinstry,
Earl H. Rebhorn,
Wilton H. Robinson,
Fred W. Rothermel,
Fred S. Shaulis,
William H. Schmidt, *Chairman.*

COMMISSION ON THE CONTROL OF SYPHILIS AND VENEREAL DISEASES

To the President and House of Delegates:

Having received my appointment sometime after the former chairman, Dr. Robert L. Gilman of Philadelphia, had entered the naval branch of the Nation's service, I find it difficult and inadvisable at this time to make any report regarding the commission's activities since its 1940 report.

Respectfully submitted,

Samuel L. Grossman, *Chairman.*

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LABORATORY COMMITTEE

To the President and House of Delegates:

Following the action of the Board of Trustees, creating a Laboratory Committee of The Medical Society of the State of Pennsylvania, as of Apr. 8, 1941, this committee held one meeting in April attended by the committee members and the president and the secretary of the State Medical Society. The director of the state laboratory in Philadelphia, Dr. Verner Nesbit, was an invited guest.

A review of the existing laboratory facilities in the State of Pennsylvania was presented showing that there are 68 clinical pathologists certified by the American Board, and 70 additional clinical pathologists listed by the American Society of Clinical Pathologists or the American Medical Association, making a total of 138; 80 of these are located in Pittsburgh and Philadelphia, leaving but 58 scattered throughout the remainder of the state.

There are approximately 296 laboratories approved for serologic determinations by the State Department of Health, of which more than one-half are either under the partial control of pathologists or under the direction of lay workers.

There are 32 counties without acceptable laboratories, although laboratories exist in all but 7 counties. Because of physicians lending their names to hospital as well as commercial laboratories, when these physicians are neither by experience nor practice prepared to direct clinical laboratories, it is difficult to ascertain exactly the number of laboratories under technician direction, in spirit if not in fact. It may be safely assumed that more than one-half of the laboratories in the state, commercial as well as hospital laboratories, are under the direction of non-medical graduates.

Laboratory technicians are finding it profitable, because of the act recently passed requiring premarital and prenatal serologic testing, to relinquish their hospital attachments and establish their own private laboratories, primarily for serologic work but undoubtedly for the purpose of eventually extending the laboratory services to all phases of clinical pathology. It is also apparent, especially in the larger states, that many pharmacists originally performing urinalyses only and occasionally blood counts now extend their services to serologic testing and medical chemistry. Inspection has proved that some of these drugstore laboratories are inadequately equipped, either physically or intellectually; some have been refused approval by the State Department of Health, and although their serologic work is not acceptable, they still perform various laboratory tests for practicing physicians. The effect of these lay-directed laboratories has been, and will continue to be, a deterrent to the further development of clinical pathology as well as flagrant violations of the Medical Practice Act. The State of Pennsylvania is no more negligent in its field than many other states.

Only about 7 states in the Union require that laboratory directors be graduates in medicine; most of the others make no attempt to dictate the character of the personnel in laboratories; 2 states require the directors to be college graduates; 10 approve laboratories by inspection, with due regard for educational background of the personnel; 17 have no laws respecting clinical laboratories. In our survey only 40 states replied to questionnaires sent out.

The correction of these evils and the supplying of adequate laboratory service is a challenge to the organized medical profession, for even with the laboratory facilities that exist, the needs of industry in defense and the needs of the syphilis control program will place a burden on approved laboratories that will be borne with difficulty. The needs of these two projects, (a) the syphilis control program and (b) the serologic survey in industry, will pave the way for still more lay-directed laboratories. This situation, we can anticipate, will persist after the emergency is over. Our 1940 House of Delegates recommended the creation of a laboratory committee in each component county medical society. To date we are aware, through information supplied, of only 26 county societies having created such committees.

It is urged that these committees be continued during the coming year and that every effort be made to bring about the appointment of similar committees in the remaining 34 component societies.

Your committee has no further recommendations to make at this time and recognizes that any radical interference with apparently accepted lay-directed laboratories might result in further intensifying the present inadequacies. The eventual solution lies within support of the essentials for a laboratory as laid down by the 1941 House of Delegates of the American Medical Association and the adoption of every means to encourage more physicians to take up this all-important specialty in medicine.

Respectfully submitted,

H. IVAN BROWN,
HENRY F. HUNT,
GEORGE R. LACY,
LLOYD E. WURSTER,
FRANK W. KONZELMANN, *Chairman.*

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COMMITTEE ON PEDIATRIC EDUCATION

To the President and House of Delegates:

During the past year the Pediatric Education Committee of the State Medical Society arranged several special features, particularly along the line of postgraduate instruction. With the co-operation of several institutions and pediatric groups in Philadelphia, one day a month was set aside for local and visiting physicians to obtain additional information on pediatric subjects. Four separate and distinct types of meeting, scheduled for the fourth Friday of each month, were as follows:

Clinicopathologic conference, Children's Hospital, 18th and Bainbridge Streets; Neonatal Death and Stillbirth Study Committee, Philadelphia County Medical Society Building, 21st and Spruce Streets; neuropsychiatric staff conference, St. Christopher's Hospital for Children, Lawrence and Huntingdon Streets; Abstract Club, Pennsylvania Hospital, Eighth and Spruce Streets.

Notices of this event were sent to the various county medical societies throughout the state.

With the co-operation of the postgraduate committee of the Philadelphia County Medical Society, a part of its annual seminar program was devoted to pediatric problems. Fifteen different subjects were presented by established and well-known teachers in the field and the talks were scattered over the 5 days of the institute.

At a conference held in Harrisburg the state superintendent of public instruction expressed a desire to work with the State Medical Society in reviewing textbooks used in our public schools which dealt with health problems. The companies publishing these books sent copies, which were parceled out to the various members of the Pediatric Education Committee for comment. Some have already been reviewed and others are in the process of being reviewed. A supplementary report will be made when all analyses have been received.

Respectfully submitted,

EMILY P. BACON,
JAMES E. BOWMAN,
DAVID H. BOYD,
VINCENT T. CURTIN,
JAMES K. EVERHART,
JOHN M. HIGGINS,
ROBERT A. KNOX,
J. GIBSON LOGUE,
FRANCIS T. O'DONNELL,
HENRY T. PRICE,
ELWOOD W. STITZEL,
JOSEPH STOKES, JR.,
J. HART TOLAND,
RALPH M. TYSON, *Chairman.*

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COMMITTEE ON INDUSTRIAL HEALTH

To the President and House of Delegates:

The Committee on Industrial Health of this society respectfully submits the following report of its activities from Oct. 1, 1940, to the same date in 1941:

Our work has been continued along the 3 lines of endeavor laid down in our organization plan 2 years ago and will be reported under those headings.

I. *Acquainting the Profession and Lay Public with the Facts and Problems of Industrial Health.*

The members and chairman have presented papers or talks at the 1940 convention of the Pennsylvania State organization for Public Health Nursing; at several councilor district meetings; at the first Pennsylvania Health Institute (under auspices of Pennsylvania Department of Health), Harrisburg, January, 1941; and at the third annual A. M. A. Congress on Industrial Health, Chicago, January, 1941; a radio talk (under auspices of Philadelphia Department of Health), January, 1941; and short releases in THE PENNSYLVANIA MEDICAL JOURNAL.

The committee has sponsored, arranged the program for, and run 2 round-table discussions on industrial health—at the 1940 convention of The Medical Society of the State of Pennsylvania (see PENNSYLVANIA MEDICAL JOURNAL, April, 1941), and at the 1941 convention (Pittsburgh) of the American Association of Industrial Physicians and Surgeons.

The impact of the committee's work upon the lay press may be judged by the recent Health Supplement of the Philadelphia *Record* (May 6, 1941). The leading headline and article called attention to the importance of the health of the worker in the defense program. In the preparation of this supplement your committee chairman was in frequent consultation with the *Record.*

II. *Increasing the Formal Education in Industrial Health of the Physician in General Practice, the Graduate Student Physician and the Medical Student.*

In co-operation with the Committee on Workmen's Compensation Laws of our State Society and the School of Public Health of the University of Pennsylvania, résumés of the Pennsylvania workmen's compensation and occupational disease laws were prepared and published in May, 1941.

An outline syllabus of a 6-lecture refresher course in industrial health has been prepared. This is for use in county medical society scientific programs and was distributed to each society and published in the August, 1941, Journal.

III. *Working Demonstrations of Ethical Medical Service to Small Industries.*

It had been planned to establish 2 demonstrations, one in East Pittsburgh and one in Philadelphia. The former attempt met with complete failure; the latter is still in only the negotiation stage. However, the defense program has increased the interest of employer and employee in healthful working conditions, and the committee looks forward to more success in this field of its endeavor in the not too distant future.

At the 1941 convention of our society the committee plans an exhibit to demonstrate the industrial hazards and problems commonly encountered in the Pittsburgh area.

In concluding this report, grateful appreciation for many courtesies is extended to the Division of Industrial Health, Pennsylvania Department of Health; Committee on Industrial Health, Connecticut State Medical Society; Massachusetts Division of Industrial Hygiene; and the Council on Industrial Health of the A. M. A.

Respectfully submitted,

John H. Arnett,
Frank Lehman,
Paul Correll,
James A. Hughes,
Donald B. Stouffer,
Joseph D. Findley,
Frederic C. Lechner,
Augustus M. O'Brien,
Frank A. Lorenzo,
Nathan A. Kopelman,
David E. Hemington,
Robert A. Gaughan,
Augustus S. Kech,
Charles-Francis Long, *Chairman.*

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ADVISORY COMMITTEE TO WOMAN'S AUXILIARY

To the President and House of Delegates:

To formulate properly a committee report, one must have a record of some tangible work done by that committee. Your committee finds itself with a dearth of reportable material for several very good reasons. As an advisory body it must have evidence of having given advice or counsel. It must have at some time exercised some censorship or have passed upon some controversial subject which has puzzled the body over which the advisory committee has had jurisdiction. However, no such occasion has arisen. The auxiliary, with its years of experience and achievement, has moved through the past year with a smoothness and precision that have been commendable. There has been no evidence of friction nor any controversy. All this is no doubt due to the wise leadership of its president and the sympathetic co-operation of its officers and membership. Organized and officered by the able women who have profited by the experience of the parent body, they have avoided the pitfalls which so often line the pathway of kindred groups.

It may be well, however, to comment upon its many achievements. It has first lent able support to The Medical Society of the State of Pennsylvania in the matter of benevolence, as attested by its generous gifts. It has stimulated, as in earlier years, the attendance of our members at the various annual councilor district as well as many county medical society meetings, convening with the physicians for a short session on such occasions. Not the least of the work of the auxiliary is and has been the establishment and maintenance of health institutes held throughout the state. These have been peculiar to our own state and have furnished a pattern for a nation-wide endeavor. Auxiliary members have waged, through their individual membership in women's lay organizations, a battle for health-consciousness that has achieved much in enlightening lay women on the subjects of cancer and periodic health examinations, and have broken a spear or two in the cause of anti-socialized medicine. Under the energetic leadership of its president, the auxiliary has sustained a campaign to collect surgical instruments for our British neighbors. A report of this in detail will appear elsewhere.

So ends the peaceful and satisfactory work of your advisory committee. We as a committee commend to our successors the joyful opportunity of taking up the pleasurable task of "censoring" the auxiliary.

Respectfully submitted,

Maxwell J. Lick,
Francis P. Dwyer,
John F. McCullough,
Laurence C. Milstead,
W. Burrill Odenatt, *Chairman.*

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COMMITTEE ON MEDICAL PREPAREDNESS

To the President and House of Delegates:

The Pennsylvania Committee on Medical Preparedness authorized and appointed to co-operate with the Committee on Medical Preparedness of the American Medical Association and with similar committees of the component societies of The Medical Society of the State of Pennsylvania began its work last September.

Beginning with the October, 1940, issue and including all subsequent issues of The Pennsylvania Medical Journal, the Officers' Department will be found to contain a copy of a communication addressed directly to the entire membership of the State Medical Society (Sept. 13, 1940). In the same Journal appears a communication dated Sept. 14 addressed to the members of county committees on medical preparedness and presidents and secretaries of component county societies.

In the November Journal is published a communication addressed to the latter committees and county society officers dated Oct. 12.

In the December Journal appears a communication to the above committees and officers dated Nov. 15 including a table showing by counties the names and addresses of the county chairmen of the medical preparedness committees and giving percentages of A. M. A. questionnaires returned by county society members and nonmember physicians. There is also a copy of the Pennsylvania questionnaire being distributed to the members through their own county medical society.

In the January, 1941, Journal appears a copy of our committee's progress report in detail, dated Dec. 9, to the Board of Trustees of The Medical Society of the State of Pennsylvania.

In the February Journal is printed a copy of the letter addressed to Pennsylvania physicians under 66 years of age who were not among the 10,000 Pennsylvania physicians who had completed and returned the A. M. A. questionnaire.

In the March Journal appears a copy of our committee's communication to the members of the Board of Trustees and councilors regarding the adoption in all county societies of plans (a) for the preservation of adequate medical service to the people of all communities, and (b) discussion of plans whereby the private practice of physicians, absent in military service, might be protected against the day of their return.

In the April Journal appears the copy of a letter dated Mar. 11 addressed to the county society preparedness committees and the officers of each county society, also correspondence between our committee and the Pennsylvania Selective Service director, William Mather Lewis, regarding deferment of medical students.

In the May Journal under date of Mar. 26 appears a copy of a communication addressed to county preparedness committees accompanied by a form to be returned setting forth the possibilities for developing "team" methods of conducting registration board medical examinations.

In the June Journal appears a copy of a progress report of our committee dated May 7 to the members of the Board of Trustees of the State Society.

In the July Journal we printed the names of all Pennsylvania physicians in military service as of June 15 giving service, rank, and present location.

In the September Journal is published a list of approximately 2000 Pennsylvania physicians engaged in the patriotic service assumed by those who conduct physical examinations of army selectees for local registration boards, also the personnel of 11 appeal boards.

In the October Journal we will publish the personnel of the 8 army medical examination boards.

We trust that it is obvious that we have but two reasons for reviewing as sketchily as above the printed record of our committee's activities: (1) to facilitate future references to the correspondence and the reports that led to such success as may have been achieved, and (2) for the purpose of herewith acknowledging our deep appreciation to the personnel of the many county preparedness committees, to county society officers and editors, to representatives of the Pennsylvania Selective Service Board in Harrisburg, and to representatives of the Third Corps Area in Baltimore for gracious co-operation.

As the result of all of these combined endeavors, we now have, not only in the headquarters of the A. M. A. in Chicago but in the office of the secretary of our State Medical Society and of the secretaries of our 60 component societies, filed records of Pennsylvania's physicians under 66 years of age, giving the desirable facts regarding their qualifications and willingness to serve in national or local emergencies in the varying capacities expected of medical practitioners under such circumstances.

Respectfully submitted,
Charles H. Henninger, *Chairman,*
Francis F. Borzell,
Walter F. Donaldson.

SOCIAL SECURITY CONFERENCE COMMITTEE

To the President and House of Delegates:

Grants received through federal funds to the State Department of Health from the Social Security Board during the fiscal year of 1940 and 1941 were as follows:

	1940	*1941*
Maternal and Child Health ..	$168,133.52	$223,351.00
Aid to Crippled Children ...	154,650.13	216,176.41
U. S. Public Health Service .	467,550.00	656,600.00
Venereal Disease Control ..	276,305.00	301,000.00

Under Maternal and Child Health Service in 1940 there were 16 prenatal clinics and 185 well-baby clinics; in 1941 there are 17 prenatal clinics and 182 well-baby clinics. Appropriations for Public Health Extension Service from the United States Public Health Service were reduced $100,000 due to the lack of funds or the distribution of these federal funds to other states which the Social Security Board felt were necessary. This necessitated the elimination of the Cancer Control Program from Aug. 1, 1941; the elimination of the Central Tabulating Unit, which was used to compile data and statistics on venereal diseases, pneumonia control, tuberculosis, etc.; cutting down the appropriation to the School of Public Health of the University of Pennsylvania from $50,000 to $25,000, and eliminating the $10,000 appropriation to the Phipps Institute in Philadelphia.

Since the legislature has not passed a merit or civil service bill for the Department of Health during the past session, it may be extremely difficult to obtain as much from the federal funds as have been granted in the past.

Pneumonia control has been continued. Fifty state-operated venereal disease control clinics have been established, as have 50 co-operative venereal disease control clinics with hospitals. There were 88 tuberculosis clinics in 1940 and 89 in 1941.

Because of the widespread activities of the Department of Health, which has branched out into various disease control projects, the Social Security Conference Committee has not been called into conference with the department as often as it was in 1935 when the Social Security grants-in-aid to the department were first proffered. The interpretations of the Federal Social Security Act are gradually being stretched to include more and more activities and many complications are arising which will soon require considerable co-operation between the State Department of Health and The Medical Society of the State of Pennsylvania. The Social Security Conference Committee should be continued in existence, although its work has become somewhat limited.

Respectfully submitted,
Lewis T. Buckman, Francis F. Borzell,
Kenneth S. Scott, W. Burrill Odenatt,
Ralph M. Tyson, Francis T. O'Donnell,
Walter F. Donaldson, Paul B. Steele,
Samuel L. Grossman, James S. Taylor,
Chauncey L. Palmer, *Chairman.*

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REPORT OF DELEGATES TO AMERICAN MEDICAL ASSOCIATION

To the President and House of Delegates:

In 1941, for the third time in the history of the American Medical Association, Cleveland, Ohio, was the scene of its annual session, from June 2 to 6, the other occasions having been in 1883 and 1934.

The committees representing the Ohio State Medical Association and the Cleveland Academy of Medicine, or the Cuyahoga County Medical Society, proved to be ideal hosts, easily explaining why the great annual convention of the American Medical Association should again have returned to this industrial but none the less beautiful city of Cleveland on the shore of Lake Erie within so short a period of time.

Personnel of Pennsylvania Delegation

The Medical Society of the State of Pennsylvania was represented, as usual, by a complete delegation of 11 duly elected delegates or alternates as follows: Francis F. Borzell, Philadelphia; Hugh E. McGuire serving for Robert L. Anderson who was ill, Walter F. Donaldson, and Charles H. Henninger, Pittsburgh; J. Newton Hunsberger, Norristown; Leonard G. Redding, Scranton; J. Stratton Carpenter, Pottsville, serving for James H. Corwin of Washington; William J. Armstrong, Butler, serving for Frank P. Lytle of Birdsboro; Clarence R. Phillips, Harrisburg; Charles G. Strickland, Erie; and David W. Thomas, Lock Haven.

Appointments, Registration, and Election

Members of the Pennsylvania delegation appointed to serve on reference committees of the House were Francis F. Borzell, chairman, Reports of Board of Trustees and Secretary; Charles G. Strickland, chairman, Miscellaneous Business; J. Newton Hunsberger, Credentials; Charles H. Henninger, Executive Session. Needless to state, each responded in the manner which characterizes the work of the delegates from Pennsylvania. Dr. Strickland was unusually complimented in being appointed chairman of the same reference committee in two successive sessions of the House of Delegates.

Nominated by President Frank H. Lahey, Walter F. Donaldson was elected a member of the Judicial Council of the A. M. A. for his third consecutive term of 5 years.

The total registration of Fellows at the Cleveland session was 7269; of this number, 646 were from Pennsylvania.

Officers elected included Fred W. Rankin, Lexington, Ky., president-elect; Charles A. Dukes, Oakland, Calif., vice-president; Olin West, secretary; Herman L. Kretschmer, Chicago, treasurer; Harrison H. Shoulders, Nashville, speaker of the House of Delegates.

In 1942 the A. M. A. will meet in Atlantic City; in 1943, in San Francisco; and St. Louis was chosen as the meeting place in 1944.

The names of 70 members of The Medical Society of the State of Pennsylvania were on the program of the Cleveland session to participate in the scientific programs, either as essayists or discussors; 32 were exhibitors or demonstrators in the scientific exhibit; and 8 served as chairmen or members of executive committees of the various scientific sections, 2 being section representatives to the scientific exhibit.

In spite of considerable expenditure of funds as well as time and energy of the home office staff in preparation for and during the conduct of the long trial at Washington, the reports to the 1941 House of Delegates by the secretary and the Board of Trustees indicated a remarkable degree of economic soundness, with many evidences of ever-growing unity among the Fellowship. The same may be said as a result of extensive home office expenditures of time, energy, and funds in connection with A. M. A. nation-wide activities in behalf of national defense.

A. M. A. Trial Proceedings Reviewed

The indictment and trial of the American Medical Association was given careful consideration by the House of Delegates in executive session. The House of Delegates directed the Board of Trustees to appeal the case against the judgment rendered by the District Court of the United States for the District of Columbia. The House of Delegates was addressed at length by Mr. E. M. Burke, counsel for the American Medical Association, and the Board of Trustees included in its report an explanation of a development which should be clear to those who have followed the case:

> During the course of the trial the court refused to permit the defendants to prove that Group Health Association, a membership corporation not for profit, organized under the laws of the District of Columbia, received a subsidy of $40,000 from Home Owners' Loan Corporation and other subsidies from private sources; refused to permit the defendants to prove coercion to require employees of various government departments to join Group Health Association; refused to permit the defendants to prove that Group Health Association was guilty of advertising for and soliciting of members; refused to permit the defendants to prove that they had been advised by the best legal talent available that Group Health Association was illegally practicing medicine and engaged in the operation of an insurance company contrary to law, and refused to permit the defendants to prove that Group Health Association and the doctors employed by it were violating the Principles of Medical Ethics of the medical profession. The principal reason given by the court for refusing to permit the defendants to make the aforesaid proof was that even if Group Health Association was violating the law that fact would not authorize or warrant the defendants violating the law in an effort to restrain them and that therefore the proof was immaterial. The court seemed to be of the opinion that if the activities of Group Health Association were contrary to law, it was the duty of the public prosecutor to prosecute them and not the privilege of the defendants to attempt to restrain them.

Coroner Problem

The Board of Trustees was requested to consider the advisability of setting up a committee for the purpose of advising with a similar committee from the American Bar Association in an effort to establish some uniform method of dealing with the county coroner problem.

Medical Preparedness

The Committee on Medical Preparedness recommended, and the House of Delegates approved, that the government set up a central assignment agency in connection with medical service for the nation's armed forces, said agency to include representatives of the organized medical profession, and it shall serve the Army, Navy, the Public Health Service, and the civilian and industrial needs of the nation in the present and similar emergencies.

The Committee on Medical Preparedness called special attention to instructions sent out by the Surgeon General of the Army pertaining to the assistance rendered by the American Medical Association in the classification and enlistment of physicians for service.

More Trustees Proposed

An amendment to the constitution and by-laws of the association was introduced increasing the number of trustees from 9 to 11, the purpose being to provide for a fairer geographic spread of trustees throughout the country.

Governmental Activities Discouraged

Again the House of Delegates refused to approve a proposal to establish in the U. S. Public Health Service a central institute to carry on clinical laboratory and research work in nervous and mental diseases, later extending financial aid along such lines to other than governmental institutions.

Change of Title

The by-laws were so amended as to change the name of the Section on Pharmacology and Therapeutics to "Section on Experimental Medicine and Therapeutics."

Judicial Council Advises and Is Advised

The Judicial Council advised that the revision of the Principles of Medical Ethics and the constitution and by-laws of the association be postponed until the present unsettled situation surrounding the practice of medicine becomes more nearly stabilized. The Judicial Council was granted a year in which to make recommendations and was admonished to consider carefully the question of equitable representation of the various scientific sections in the House of Delegates.

General Practice and Certification

A most popular subject for discussion was the relationship of the general practitioner to the specialist. One resolution called for a scientific Section on General Practice. It sets forth the claim that 40 per cent of surgery and 50 per cent of obstetric service are efficiently performed by well-trained and experienced general practitioners and yet there are no plans for the certification of their proficiency. The proposed new section was not approved by the House, but the scientific Section on Miscellaneous Topics was instructed to prepare an experimental program tending to develop the idea of 'general practice' as a separate entity.

Another resolution specifically called for the development of a plan for recognition of qualified general practitioners by some form of certification. The reference committee believed that this resolution advanced the idea too far and declared that the public now appreciated the difference between successful general practice and the specialties.

Every Member's Responsibility

President Van Etten in his message to the House of Delegates expressed a most significant thought full of meaning for every Fellow of the American Medical Association:

> "In some manner we must be failing to present a clear and convincing picture of our organization. Can you not take the trouble to convince the people who sent you here and whose interests you serve that this is the most democratic of all democratic organizations? Can you not tell them that no one else delegated you to sit in this House and endowed you with power but the members of your county medical societies who sent you to your state societies, from which you were chosen for your high office? Can you not take the trouble to enlighten public opinion at your homes through your local newspapers and develop a consciousness of the realities of local health needs and promote them? Can you not tell the world that the loyalties of organized medicine are even more altruistic today than they have ever been before?"

Conclusion

We commend to your attention the splendid unbroken record of consistent attendance and faithful service maintained at their own expense by delegates representing our own state society in the A. M. A., wherever its annual sessions are held.

Respectfully submitted,
WALTER F. DONALDSON, *Chairman.*

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, ***Secretary***
8104 Jenkins Arcade
Pittsburgh, Pa.

Medical Statesmanship Comprises the Art of Changing the Health Condition of a Community, County, or State From What It Is to What It Ought to Be

INSTALLATION MEETING

The installation of Lewis T. Buckman, M.D., of Wilkes-Barre, as president of The Medical Society of the State of Pennsylvania, will take place on Tuesday evening, Oct. 7, at 8:30 o'clock, in Carnegie Music Hall, Schenley Park, Pittsburgh.

Following Dr. Buckman's presidential address there will be a pleasing program of entertainment, including a one-act play, "A Happy Journey to Trenton and Camden," presented by the School of Drama of Carnegie Institute of Technology; the Ruby Blakely Singers, a mixed chorus featuring the songs of Stephen C. Foster; and Mr. Geoffrey O'Hara, humorist, composer, and pianist. An organ recital will precede the formal program.

Tickets of admission to Carnegie Music Hall will be distributed at the society's registration desk.

ANNUAL REPORTS INTENDED FOR ALL MEMBERS

The reports herewith referred to are intended for the entire membership (9500) of The Medical Society of the State of Pennsylvania. Following the custom of many years, the September issue of The Pennsylvania Medical Journal contains reports addressed to the House of Delegates or the Board of Trustees from elective officers, standing and special committees, the editorial and exhibit management. Administrative and financial policies should be of interest to alert State Society members, second only to reports on endeavors to keep the organization and its membership abreast of medical progress and socio-economic developments.

Annual reports from the individual trustees usually reflect the varying reactions of county medical societies in the 12 divisions of the state to the same activator, whether it be organized medicine's co-operative reactions to the suggestions of public health authorities or other governmental bureaus (municipal, county, state, or federal), or reactions to proposed health legislation. The 12 councilor district reports as well as reports of other State Society officers are well worth a careful reading.

ADMINISTERING NYA EXAMINATION SERVICE

At a conference between representatives of the Medical Economics Committee and the Board of Trustees of The Medical Society of the State of Pennsylvania, and of the Pennsylvania National Youth Administration, which was held at 230 State Street, Harrisburg, on Aug. 14, an agreement was reached whereby the recommendations of the economics committee as mailed to each component county medical society on June 30, 1941, will be adopted. The simple modification is expressed in the following paragraph:

> In sparsely settled counties where there is a small number of enrollees to be examined, the NYA, having gained approval of the proper representatives of the county medical society concerned, may have such enrollees examined in neighboring counties.

Lackawanna County Medical Society Plans NYA Service

At a meeting of the NYA Committee of the Lackawanna County Medical Society held Aug. 8, 1941, the following procedure was recommended to the membership of the Lackawanna County Society:

1. That the Lackawanna County Medical Society co-operate with the NYA in the physical examination of applicants for defense work. These examinations are limited to males between the ages of 17 and 25 years, both included.

2. The examinations are to be conducted by physicians residing and practicing in Lackawanna County.

3. Approximately 14 or 15 applicants will be examined at one session and the examiners will each receive $4.00 an hour.

The purpose is for the detection of defects only; the question of treatment is not considered in this report.

4. The personnel for each session shall consist of two general physicians, one roentgenologist, one eye, ear, nose, and throat specialist, and one dentist. (These are the recommendations of Mr. Fox, the NYA representative, and the same type of board functions elsewhere.)

5. A committee of the Lackawanna County Medical Society consisting of the president, the vice-presidents, the secretary-treasurer, and all of the members of the board of trustees will act as a governing board in the selection of the examiners, except in dentistry.

6. It will be mandatory on the governing board to select the examiners from those physicians within Lackawanna County who make application; the selection will be made by drawing, irrespective of the order in which the applications were made. No physician will serve a greater number of times than a colleague in the same specialty, and no physician at any time will serve in more than one capacity.

The first group of applicants numbers 200; it is recommended that those be examined by 3 groups of examiners.

John E. Manley,
Wm. Rowland Davies,
Edward P. Swartz,
James D. Lewis,
Eugene A. Curtin,
William J. Corcoran, *Chairman.*

GOLF TOURNAMENT AT PITTSBURGH

The annual golf tournament of the Golf Association of The Medical Society of the State of Pennsylvania will open at 9 a. m. on Monday, Oct. 6, 1941, at the South Hills Country Club (on Route 51), twelve (12) minutes' drive from the headquarters of the State Society convention—Hotel William Penn. There will be the usual generous number of desirable prizes, not forgetting those for low gross score—McKee Cup and medal; low net score—President's cup; and the all-important kickers' handicap.

The golf dinner (price $2.25) will be held at the club at 7 o'clock, to which nongolfers are cordially invited. Reservations must be made in advance with Dr. John N. Frederick, Jenkins Arcade, Pittsburgh. Five dollars ($5.00) from golf players, paid in advance or on Oct. 6, will cover the year's dues, the greens fees, and the cost of the dinner.

All members of The Medical Society of the State of Pennsylvania are eligible for membership in the Golf Association.

Golf Committee,
*Frank C. Blessing, *Chairman,*
William A. Rote, *Vice Chairman,*
John F. Frederick,
James W. Speelman,
Donald J. Stewart.

NYA IN NEW JERSEY

Health Needs Among New Jersey Youth—A Preliminary Report

By Daniel Bergsma, M.D., Trenton, N. J.,
State Health Consultant,
National Youth Administration for New Jersey

The NYA health program in New Jersey is cosponsored by the New Jersey State Department of Health. The state health consultant and the state health supervisor were appointed in January, 1941. A survey of facilities was made immediately. Questions of transportation of youth, equipment, supplies, detailed plans of procedure, etc., were carefully considered. An educational program of lectures, discussions, motion pictures, and leaflets was carried on among the youth with special emphasis on tuberculin testing and blood testing to acquaint them with the value of these procedures. An NYA Health Advisory Committee was organized consisting of 5 physicians, a dentist, and a public health nurse.

Doctors interested in the examining of youth on this program submit applications on official forms.

The names of those who apply are sent to their county medical societies so that we may be informed if any of the applicants are not professionally acceptable.

Procedure

Complete physical examinations are performed either by teams of specialists at some urban center or at the private offices of physicians in rural areas. This health program includes diagnosis and assistance in obtaining remedial medical and dental care from existing organized sources such as private physicians and dentists or through clinics for indigent youth. The program does not include treatment except to the relatively small number of youth living at resident centers.

Health Classifications

Here is the health status classification used throughout the nation in connection with the NYA health program. *Class 1* means fit for any work or athletic activity; no defects present or only very slight defects. *Class 2* means fit for any work or athletic activity. Abnormal conditions present can be corrected by proper measures which may be medical, dental, or by special exercise or diet. *Class 3* means fit for almost any kind of employment or recreational activity. This includes minor defects not thought to be amenable to correction but not severely handicapping. In this case the physician indicates the work to be avoided, or specifically approves the work assignment given to the youth.

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* Deceased Aug. 19, 1941.

Clinical Findings

To date, with 2316 examined, only 6 per cent have been placed in Class 1 and 80 per cent in Class 2. A large proportion of the latter were physically well except for dental caries. Actually 51 per cent of the youth would have been in Class 1 if it were not for dental pathology; thus we find that 92 per cent were either free of defects, had only very slight defects, or had abnormal conditions which could be corrected by proper measures. This presents a huge medical and dental problem because 86 per cent of these youth have correctible defects.

One per cent of the youth had minor defects not amenable to correction. These were in Class 3. Seven per cent were in Class 4 because they were fit only for certain kinds of employment. Thus far no youth have been found in Classes 5 or 6.

Refraction to correct astigmatism was recommended in 31 per cent of the youth. Tonsillectomy was recommended in 7 per cent, circumcision in 2 per cent, and hernia repair in 1 per cent.

Summary

We have only begun our NYA health program. The principal defects were dental caries, refractory errors, and a few cases of tuberculosis. Two of these were minimal but active, another moderately advanced and active, and, most dangerous of all, an advanced bilaterally active case with cavitation. We hope that, through this program and by active co-operation with the organized medical, dental, nursing, and social service professions, these youth will obtain a thorough diagnostic service and will have their remediable defects corrected and their future health assured.—*Journal of the Medical Society of New Jersey,* July, 1941.

PRESIDENTS SHOULD PROVOKE PROGRESS

To the Presidents of the Component County
Medical Societies of The Medical Society
of the State of Pennsylvania.

In Re: A Successful Administration.

Dear Doctor:

It is assumed that every president of a county medical society is ambitious that his administrative year may bring to the society some achievement in the form of progress that will not only be helpful to the membership but possibly mark success at the end of his presidential "year." Only the exceptional president may reasonably be expected to reach this degree of success without some knowledge of successful methods used by his predecessors or by presidents of other county medical societies.

Ordinarily, county medical society meetings are not held during the summer months, which may possibly suggest to you an appropriate period to be studying and discussing with your fellow officers and your own committee appointees plans for your own administration during the coming fall and winter. In lieu of opportunities to attend meetings of other enterprising county medical societies, 2 alternate means of reviewing their methods are herewith respectfully suggested:

First, the September Pennsylvania Medical Journal will contain the annual reports of the district councilors of the State Medical Society. The writer has had the privilege of reading these reports in advance of publication. Therein is set forth, more or less in detail, varying administrative phases in the most recent history of certain progressive county medical societies. If you would like excerpts from these reports in advance, such will be forwarded to you upon receipt of your request addressed to the secretary.

Second, another available source of such information for the benefit of a county medical society president or president-elect might well be the familiar monthly bulletin published by up-and-coming societies. If you would like to be placed temporarily on the mailing list of a number of such bulletins, the undersigned will again be happy to arrange for same without any expense or annoyance to you except that of notifying him of such desire.

Again, and last, may we suggest for your thought and decision the wisdom of your addressing a letter to each fellow officer and committee chairman and possibly to the entire membership of your society, soliciting their energetic co-operation in bringing about during the next few months any possible improvement in the programs of your county society's periodic meetings and in its public relations.

Surely the future place of the medical profession in the United States in the face of changing social, economic, and political conditions in the year 1941 justifies on the part of every physician unified action with his fellow physicians in an endeavor to maintain the high place now held, through health and medical service, in the promotion of community and national welfare.

Anticipating the opportunity of being of service to you, and wishing for your society its potential increase in membership, in attendance, and in interest, and throughout your term of office achievement that will bring you satisfaction at the conclusion of your administration, I remain

Yours sincerely,
Walter F. Donaldson, *Secretary.*

July 29, 1941.

REGISTERING ARMY SELECTEES

The original appointees to serve as examining physicians on Selective Service registration boards in all counties in Pennsylvania were recommended to Governor Arthur H. James by the House of Delegates of The Medical Society of the State of Pennsylvania at its 1940 meeting in Philadelphia. Of this number, totaling 1266 physicians, 98 per cent of those who accepted were members of our state medical society.

It was pleasing to learn later from Selective Service headquarters in Harrisburg that of the hundreds of additional physicians appointed to augment those already engaged in the work the above-mentioned proportion of State Society members was maintained (see county lists appended).

The names of the physicians composing the medical advisory boards to the 11 Appeal Areas in Pennsylvania follow the names of the Registration Board physicians. The medical personnel of the 8 army examination stations will be published in the October issue of the Journal.

LOCAL BOARD EXAMINING PHYSICIANS

Original Appointees, October, 1940

Adams County

William E. Flickinger	York Springs
Bruce N. Wolff	Gettysburg

Allegheny County

Ivo E. Rowland	Elizabeth
H. C. Hackman	E. McKeesport
H. O. Pollock	Turtle Creek
David L. Mandelblatt	Braddock
Charles H. Rever	Wilkinsburg
Frederick V. Longphre	Forest Hills, Wilkinsburg
William T. Pyle	Swissvale
Richard W. Ebe	Wilkinsburg
C. E. Piper	Oakmont
William Holland	Springdale
Charles S. Orris	Tarentum
W. R. Marshall	Aspinwall
Edward P. Griffiths	Etna
L. E. Etter	Warrendale
Arthur H. Gross	Bellevue
Peter M. Feltwell, Jr.	Sewickley
Edward M. Iland	Coraopolis
D. Pigossi	Bridgeville
Joseph A. Lafferty	McKees Rocks
Sterrett E. Dietrich	Ingram
Charles W. Tuthill	Crafton
H. S. Wallace	Ingram
Thomas E. Cannon	Carnegie
James Balph, Jr.	Dormont
J. Edgar Kent	Coverdale
John C. Greenfield	Clairton
A. K. Lewis	Munhall
L. P. Losa	Homestead
Robert L. Botkin	Duquesne
John D. Farkas	McKeesport
Edward Y. Ord	McKeesport
J. L. Auslander	McKeesport

PITTSBURGH

John J. Horwitz
Thad A. Starzynski
Alphonse Aiello
Edgar E. Mattox
James C. Fleming
John S. Mackrell
R. A. Walther
George W. Rall
W. W. Martin
William W. Ruehl
Charles C. Moore
Thomas W. Cooke
W. A. Wycoff
J. Slater Crawford
John D. Donovan
William F. Bozic
William H. Evans
Eli N. Foster
E. B. Henry
William A. Forster
C. W. Williams
John J. Kolski
George W. Ely
George Leibold
Joseph B. Gold
A. Wray Barkley
C. Wm. G. Schaefer
Francis A. Riley
Michael Edward O'Brien
John H. Curran
Charles R. Smith
Charles T. Provost

Armstrong County

B. J. Longwell	Seminole
W. H. Nix	Cadogan
Charles W. Thompson	Ford City

Beaver County

John H. Boal	Freedom
L. P. Atwell	Beaver Falls
L. B. Miller	New Brighton
D. C. Moore	Beaver
L. L. Hunter	Midland
C. S. McGeorge	Ambridge
H. Stanley Kerchner	Beaver
C. W. Smith	Aliquippa

Bedford County

William J. Shoenthal	New Paris
Wesley F. McCahan	Everett

Berks County

Charles F. Smith	Topton
Stanley A. Brunner	Lenhartsville
George W. Fahrenbach	Bernville
Howard U. Miller	Mt. Penn
Lewis R. Rothermel	Shillington
M. M. Wassersweig	Reading
Walter M. Bertolet	Reading
Simon B. Glick	Reading
Clair G. Spangler	Reading
William F. Krick	Reading

Blair County

Ralph R. Whittaker	Williamsburg
John B. Nason	Tyrone
David J. Kirk	Tyrone
Wm. H. Meminger	Altoona
Richard S. Magee	Altoona
H. F. Moffitt	Altoona
C. W. Burket	Altoona

Bradford County

George E. Richardson	Towanda
A. G. Coughlin	Athens

Bucks County

Frank Lehman	Doylestown
Fred Wagner	Bristol
Charles M. Thompson	Newton
William I. Westcott	Doylestown
William G. Moyer	Quakertown

Butler County

Ralph M. Christie	Butler
H. Randolph Wilson	Evans City
H. Ogle Horner	Petrolia

Cambria County

E. C. Flick	Ashville
A. W. Fees	Spangler
M. C. Dunnick	Nanty Glo
J. D. Keiper	Johnstown
H. G. Difenderfer	Beaverdale
Robert Sagerson	Johnstown
L. L. Porch	Johnstown
Charles H. Schultz	Johnstown

Cameron County

W. H. Bush	Emporium

Carbon County

J. L. Bond	Lehighton
James J. Dougherty	Mauch Chunk
Stanley F. Druckenmiller	Lansford

Centre County

Grover C. Glenn	State College
Enoch H. Adams	Bellefonte

Chester County

J. Elmer Gotwals	Phoenixville
Howard B. Davis	Downingtown
J. Ashbridge Perkins	Coatesville
L. E. Chapell	Kennett Square
T. G. Aiken	Berwyn

Clarion County

E. J. Keeling	Clarion
S. J. Lockey	Clarion
Theodore R. Koenig	Knox
John N. Camp	Foxburg

Clearfield County

Arthur D. Cowdrick	Clearfield
R. Harwood Fogel	DuBois
Ray F. Tompkins	Irvona

Clinton County

H. G. Hager	Lock Haven
Henry G. McKeown	Renovo

Columbia County

Charles B. Yost	Bloomsburg
Edwin A. Glenn	Berwick

Crawford County

Carl M. Hazon	Titusville
J. F. Connor	Meadville
Herman H. Walker	Linesville

Cumberland County

Walter H. Burgin	New Cumberland
C. S. Fickel	Carlisle
S. Dana Sutliff	Shippensburg

Dauphin County

H. C. Myers	Steelton
Donald B. Stouffer	Hershey
E. Kirby Lawson, Sr.	Penbrook
C. C. Bobb	Lykens
Henry F. Hottenstein	Millersburg
John B. McAlister	Harrisburg
L. G. Crawford	Harrisburg
C. I. Trullinger	Harrisburg

Delaware County

F. E. Chamberlain	Glenolden
Fred S. Hunlock	Collingdale
John M. Hutchings	Clifton Heights
A. W. Daniell	Upper Darby
J. O. Coffey, Jr.	Drexel Hill
J. B. Roberts	Llanerch
Ralph Bell	Media
Clark D. Stull	Ridley Park
Henry Noskow	Marcus Hook
D. J. McCormick	Chester
Paul Crowther	Chester
Albin R. Rozploch	Chester

Elk County

S. T. McCabe	Johnsonburg
W. M. Black	St. Marys

Erie County

J. W. Switzer	Wesleyville
L. R. Umburn	Albion
V. K. Worster	Waterford
E. H. Drozeski	Erie
M. M. Mszanowski	Erie
Harrison Dunn	Erie
T. P. Trodway	Erie
P. G. Mainzer	Erie
L. A. Lasher	Erie
A. H. Bunshaw	Erie

Fayette County

Paul D. Luckey	Connellsville
R. R. Morrison	Dunbar
John W. Gordon	Belle Vernon
A. W. Spears	Grindstone
H. B. Messmore	Brownsville
James E. VanGilder	Uniontown
A. E. Coughenour	McClellandtown
J. L. McCracken	Smithfield

Forest County

F. J. Bovard	Tionesta

Franklin County

Samuel D. Shull	Chambersburg
J. H. Swan	St. Thomas
Gordon E. Hanna	Waynesboro

Fulton County

Edgar H. MacKinley	McConnellsburg

Greene County

Clinton E. Bane	Jefferson
Donald R. Jacobs	Waynesburg

Huntingdon County

Howard V. Locke	Orbisonia
George H. Bumgardner	Orbisonia
Charles R. Reiners	Huntingdon

Indiana County

C. E. Rink	Indiana
Ralph M. Lytle	Saltsburg
E. L. Hughes	Commodore

Jefferson County

Walter Dick	Brookville
Lewis R. McCauley	Punxsutawney

Juniata County

Robert P. Banks	Mifflintown

Lackawanna County

Walter Loftus	Carbondale
J. J. O'Connor	Olyphant
W. H. Newman	Clark's Summit
Joseph A. Carr	Olyphant
Paul E. Kubasko	Throop
Myles A. Gibbons	Dunmore
J. Warren Knedler	Moscow
H. W. Albertson	Scranton
F. R. Wheelock	Scranton
John J. Brennan	Scranton
Robert J. Flynn	Scranton
Jacob J. Lonsdorf	Scranton
Joseph D. Moylan	Scranton
Samuel Gross	Scranton
Frederick J. Bishop	Scranton

Lancaster County

Henry D. Lawrence	Marietta
John M. Mustard	Millersville
William Giles Hess	Holtwood
Stanley H. Hackman	Strasburg
Joseph W. Grosh	Lititz
Horace C. Kinzer	Lancaster
Thomas B. Metzgar	Lancaster
Gardner Atlee Sayres	Lancaster

Lawrence County

Oswald G. Taylor	Newcastle
Hugh M. Hart	New Wilmington
J. Lumen Popp	New Castle
F. W. Guy	New Castle

Lebanon County

J. DeWitt Kerr	Lebanon
George E. Flanagan	Myerstown
Warren I. Brubaker	Annville

Lehigh County

Gerald S. Backenstoe	Emmaus
Charles H. Muschlitz	Slatington
Harry L. Baker	Catasauqua
Frederick R. Bausch, Sr.	Allentown
Ralph H. Henry	Allentown
H. Cotter Boyle	Allentown
Clyde Kelchner	Allentown
H. Edwin Eisenhard	Allentown
J. Roland Heller	Allentown

Luzerne County

G. L. Howell	Trucksville
John L. Lavin	Swoyersville
A. W. Grover	Kingston
Albert H. Gabriel	Plymouth
Eugene F. Wolfe	Shickshinny
Ralph E. Warntz	Nescopeck
Wilbur A. Foster	Mountain Top
I. C. Morgan	Nanticoke
J. P. Dougherty	Ashley
Lotzi Vercusky	Freeland
John P. Zawoiski	Plains
Bernard S. Androsky	Duryea
Thomas H. Murphy	Pittston
George W. Taggart	Hazleton
Frank Veneroso	Hazleton
J. Alan Corson	Wilkes-Barre
John Howorth	Wilkes-Barre
Earle E. Wagner	Wilkes-Barre
Francis T. O'Donnell	Wilkes-Barre

Lycoming County

I. T. Gilmore	Hughesville
W. E. Turner	Montgomery
Galen D. Castlebury	Williamsport
George S. Klump	Williamsport

McKean County

Albert J. Colcord	Port Allegany
Earle M. McLean	Bradford

Mercer County

Montrose B. Magoffin	Mercer
William H. Phillips	Greenville
C. O. Rickenbrode	Farrell
Harvey E. Massy	Sharon

Mifflin County

Oscar M. Weaver	Lewistown
J. S. Brown	Lewistown

Monroe County

J. Miner DeKay	Mountainhome

Montgomery County

Norman Lepper	Rockledge
Sumner H. Cross	Jenkintown
Clifford H. Arnold	Ardmore
J. Ivan Hershey	Bryn Mawr
Philip J. Lukens	Ambler
Herbert B. Shearer	Worcester
Paul T. Moyer	Lansdale
Henry Graber	Royersford
Henry David Reed	Pottstown
Joseph L. Hunsberger	Norristown
George W. Miller	Norristown

Montour County

Cameron Shultz	Danville

Northampton County

L. A. Smith	Penn Argyl
M. G. Miller	Northampton
Jacob A. Fraunfelder	Nazareth
C. P. Struthers	Easton
Victor Messinger	Easton
James A. Morgenstern	Easton
Alexander J. Maysells	Bethlehem
E. R. Beidleman	Bethlehem
Herbert J. Schmoyer	Bethlehem

Northumberland County

Charles R. Gennaria	Shamokin
George C. Davis	Milton
Ralph W. E. Wilkinson	Trevorton
Sydney Kallaway	Shamokin
I. E. Smigelsky	Mount Carmel

Perry County

Charles R. Snyder	Marysville

Philadelphia County (Philadelphia)

Nathan Steinberg
Joseph A. Pescatore
Frank J. Rose
Alexander Sterling
Max Mann
Albert A. Fingles
Sam Chartock
Frederick E. Keller
Victor Dolfman
Paul F. Bremer
Henry B. Ingle
Wilbur H. Strickland
Robert W. Henry
Earl A. Daugherty
John D. McElwee
Harry A. Stembler
Richard W. Larer
Pedro J. Carreras
George C. Yeager
Howard K. White
Francis M. James, Jr.
Charles E. Yeutter
Valentine R. Manning
William S. Newcomet
G. Mason Astley
Russell C. Seipel
Samuel Baer
Thomas B. Getty
A. Clarke Stroup
Alexander P. Deak
Francis D. Purnell
Mark T. Booye
Harry S. Bachman
John H. McCutcheon
Thomas Aceto
Leopold Vaccaro
Daniel J. Kennedy
Fiore F. Trombetta
Samuel X. Radhill
Ralph C. Hand
Francis H. Eaton
William J. MacMurtrie
Richard J. Coyne
Chas. A. Barron
James Kay
Samuel J. Levitt
E. G. Hawman
Joseph N. Grossman

Joseph Otto Keezel
Theodore F. Ramspacker
Gerald W. Haran
Julius J. Smith
Jacob S. P. Makler
John M. Laferty
Joseph L. Hollander
Morris L. Fuchs
Earl F. Hawkins
Emanuel R. Ferguson
Ralph S. Holtzhausser
Ralph W. Lorry
Samuel S. Ringold
Clarence Eugene Perkins
Frederick E. Haentze
Arthur A. Berenbaum
Charles H. Baldwin
Donald Riegel
Samuel Ellis
John B. Claffey
F. Wayne Jarvis
Harold T. Antrim
Theodore W. Battafarno
Valentine R. Manning
Harry K. Roessler
George D. Shoup
Jacob Solit
Frederick W. Fortune
Edward J. Wiza
William D. Baun
Charles A. Moriarity
Eugene T. Hinson
Thomas J. English
Samuel Baron
Harry E. Knox
Ralph Getelman
Joseph C. Gayl
Samuel Bradbury
Harry N. Stein
J. Paul Austin
Philip S. Barba
Henry W. Gray
Harry W. Goos
Robert S. Rusling
Edward B. LeWinn

PIKE COUNTY

Walter R. Shannon .... Milford

POTTER COUNTY

F. G. Reese .... Coudersport
J. Irving Bentley .... Coudersport

SCHUYLKILL COUNTY

William H. Hinkle .... Tamaqua
George S. Hensyl .... Mahanoy City
Walter R. Rentschler .... Ringtown
Frank H. Cantlin .... Shenandoah
James H. Erlenbach .... Fountain Springs
T. J. McGurl .... Minersville
James B. Heller .... Pottsville
H. S. Dunkleberger .... Valley View
T. C. Fegley .... Tremont

SNYDER COUNTY

Charles W. Straub .... Middleburg

SOMERSET COUNTY

Jerry James .... Hooversville
Fred B. Shaffer .... Somerset
M. S. Cargill .... Somerset
William Logue .... Meyersdale
Glenn Z. Brant .... Meyersdale
Edwin M. Price .... Confluence

SULLIVAN COUNTY

Joseph F. Dreier .... Dushore

SUSQUEHANNA COUNTY

F. S. Birchard .... Montrose
A. B. Cimechowski .... Forest City

TIOGA COUNTY

Farnham H. Shaw .... Wellsboro
Harry Williams .... Elkland

UNION COUNTY

John W. Arbogast .... Lewisburg

VENANGO COUNTY

Fred Wilson .... Franklin
C. S. Bridenbaugh .... Emlenton
James A. Welty .... Oil City

WARREN COUNTY

Floyd G. Schuler .... Warren
Jacob F. Crane .... North Warren

WASHINGTON COUNTY

George K. Hays .... Monongahela
Edwin M. McKay .... Charleroi
Milton F. Manning .... Bealsville
Wayne T. McVitty .... Houston
A. E. Thompson .... Washington
W. J. L. McCullough .... Washington
George S. Cunningham .... McDonald
M. L. Bowser .... McDonald
George L. McKee .... Burgettstown

WAYNE COUNTY

Clifford H. Mack .... Lake Ariel

WESTMORELAND COUNTY

J. D. Greaves .... New Alexandria
Thomas St. Clair .... Latrobe
Harold W. Thomas .... Arnold
John A. Boale .... Vandergrift
David O. Thomas .... New Kensington
C. W. Dixon .... Export
G. M. Dickson .... Adamsburg
Iden M. Portser .... Greensburg
A. D. Miller .... Irwin
D. C. Farquhar .... West Newton
C. H. Poole .... Ruffsdale
Harry E. Shaw .... Donegal
Rex A. Patterson .... Ligonier

WYOMING COUNTY

Van C. Decker .... Nicholson

YORK COUNTY

F. F. Bergdoll .... North York
E. M. Free .... Stewartstown
I. V. Bamberger .... York Haven
N. H. Seitz .... Hanover
J. Fletcher Lutz .... York
H. B. Thomas .... York
J. P. Paul .... York

Additional Appointees

ADAMS COUNTY

Henry F. Goeken .... Littlestown
C. C. MacMinn .... New Oxford
Roy W. Gifford .... Gettysburg
D. B. Coover .... Littlestown
J. P. Rhoades .... Gettysburg
Wilbur H. Miller .... New Oxford
Leonard L. Potter .... Littlestown
James B. Goyne .... Gettysburg

ALLEGHENY COUNTY

Thomas E. Cannon .... Carnegie
N. D. Brant .... Crafton
William B. Patterson .... Crafton
George R. Sippel .... Homestead
L. L. Darsie .... Homestead
Walter E. Brown .... Homestead
A. L. Barbrow .... Homestead
George G. Gibson .... Wilkinsburg
W. H. Lewis .... Sewickley
Stanley McClelland .... Bakerstown
Kenneth Logan .... West View
G. Frederick Heiber .... Perrysville

W. E. Backus	Pitcairn
Erle F. Smith	East Pittsburgh
R. L. Peterson	Swissvale
Edgar H. Sloan	Ben Avon
T. Ewing Thompson, Jr.	Avalon
R. W. Dunlop	Dormont
F. A. Aaron	Dormont
Allan Simpson	McKeesport
John Donoghue	McKeesport
Thomas Richmond	Glassport
H. L. Stollar	Elizabeth
D. A. Fusia	Oakmont
J. C. Edgar	Oakmont
H. S. Mock	Cheswick
Charles O. Dickey	Creighton
Frank R. Braden	Coraopolis
H. B. Speer	Coraopolis
William T. Pyle	Swissvale
Eugene J. Schachter	Braddock
F. B. Patterson	Swissvale
John E. Newhouse	East Pittsburgh
Albert A. Rosenberg	East Pittsburgh
L. T. Mitchell	Aspinwall
Richard Snyder	Avalon
Earle D. Baumann	Bellevue
J. H. Barnard	Emsworth
L. H. Sweterlitsch	Coraopolis
James C. Hawkins	Coraopolis
James G. Cunningham	Carnegie
Edward Klee	Carnegie
William J. Connelly	Carnegie
Samuel W. Shibler	Carnegie
Jack Z. Rohm	Carnegie
H. A. Klee	Carnegie
F. A. Heupler	North Braddock
L. N. Lowrey	North Braddock
R. M. Sankey	Wilkinsburg
E. R. Raymaley	Wilkinsburg
H. W. Rusbridge	Wilkinsburg
David A. Boggs	Wilkinsburg
S. R. Fulton	Wilkinsburg
W. L. Thunhurst	Wilkinsburg
William A. Heazlett	Wilkinsburg
William F. Brennan	Wilkinsburg
Paul M. Lewis	Wilkinsburg
James V. Ballantyne	Wilkinsburg
G. E. McKenzie	Wilkinsburg
C. L. Leydic	Tarentum
Fred Wohlwend	Tarentum
T. M. McLenahan, Jr.	Hazlewood
Morton McCahill	Hazlewood
Albert E. Price	Hazlewood
Joseph Lafferty	McKees Rocks
Frank A. Leonardo	Wilmerding
Daniel C. Dantini	McKees Rocks
W. H. Goodpaster	Mt. Oliver
A. G. Prokop	Clairton
J. Boyd Stewart	Wilson
J. P. Nill	McKeesport
A. J. Novak	McKeesport
W. J. Lowrie	Braddock
Albert A. Rosenberg	East Pittsburgh
Charles Keebler	McKees Rocks
Stephen Kulik	McKees Rocks
Orman G. Mathieson	Ben Avon
James C. Dobler	Avalon
John G. Grego	Sewickley
R. M. Smith	Swissvale
Raymer L. Mowry	Ingomar
H. E. Woelfel	Bellevue
R. S. Clark	Barking
J. S. Witherspoon	Avalon
F. A. Prescott	Versailles Borough
J. D. Trevaskis	Turtle Creek
C. L. Hobaugh	Renton
S. K. Hall	Sharpsburg
F. A. Ruoff	Aspinwall
W. C. Diess	Sharpsburg
W. F. Matthews	Sharpsburg
H. Schlesinger	Sharpsburg
J. F. McCullough	Fox Chapel Borough
L. H. Steele	Sharpsburg
J. J. Settino	Sharpsburg
S. R. Perrin	Etna
H. Beck	Aspinwall
E. E. Ambrose	Aspinwall
Edmund Clements	McKees Rocks
Hubert Goodrich	McKees Rocks
Oscar Ziel	McKees Rocks
Joseph F. Strini	McKees Rocks
Warren A. Wolf	Homestead
L. T. Sabow	Homestead
Francis J. O'Malley	Homestead
James A. Walsh	Homestead
Harold Agnew	Emsworth
H. S. Agnew	Dixmont
Clement R. Jones, Jr.	Dixmont
William J. Hall	McKees Rocks
W. F. Tannehill	McKees Rocks
Harry J. Kerr	McKees Rocks
Paul D. Zubritzky	McKees Rocks
William R. Hunt	Duquesne
M. L. Porvaznik	Duquesne
Charles W. Tuthill	Crafton
Randall Zimmerman	Wilmerding
V. P. Burby	Wilmerding
Charles F. Graham	Library
Granville H. Walker	Bellevue
Clarence W. Cummings	West View
Charles F. Metzger	Bellevue
Daniel A. Atkinson, Jr.	West View
Wesley C. Allison	Bellevue
J. F. Richards	Bellevue
Ralph N. Dougherty	McKeesport
G. M. Pierce	McKeesport
T. C. Zeller	McKeesport
Stephen A. Flaherty	McKeesport
Paul Repper	McKeesport
Samuel Goldberg	McKeesport
C. B. Bryce	McKeesport
J. V. Carr	McKees Rocks

PITTSBURGH

George H. Zuck
F. J. Arch
R. E. Phillpott
R. M. Skidmore
J. G. Conti
H. J. Kalet
E. V. Weller
R. B. Sullivan
William Rote
John P. Laughlin
Roy Fiedler
John R. Grant
A. R. Marmins
Manuel C. Green
R. A. Amrhein
J. B. Bloom
C. H. Ketterer
H. W. Wuerthele
W. H. Wymard
Samuel Goodstone
C. W. Kohler
Louis Lasday
Thomas W. Cook
Pressley M. Lloyd
J. Shepard Smith
E. L. Ringer
R. J. Askin
F. J. Santora
John E. Bryson
J. S. Morgan

Luke J. Barnett
Edward M. Schultz
Harry I. Miller
Joseph Finegold
Charles A. Janda
C. M. Straessley
J. L. Goldfield
Francis P. Tarnapowicz
Brown Fulton
Ellis W. Young
J. Staunton Saling
John D. Kistler
Milton Mamula
Frank C. Boucek
W. G. Aughenbaugh
Wallace Bulford
Paul A. Murray
A. S. McElroy
George S. Lipman
J. Ross Hague
William G. Moran
W. T. Moke
Thomas C. Wilkinson
J. R. MacDonald
B. A. McAleer
A. A. Zangrilli
D. C. Kissell
William Anderson
W. B. Gordon
Thomas L. Wilson
N. F. Rock
J. J. Schill
Christian J. Stoecklein
H. A. Johnson
Walter E. Starz
E. J. Truschel
James A. Blair
William Myers
Charles M. Adams
E. F. Truter
Leonard E. Egerman
Alpheus McKibben
F. B. Edmundson
Jacob J. Meisel, Jr.
James E. Flinn, Jr.
H. B. Orringer
E. E. Neely
Earl S. Simms
Albert B. Berkowitz
Harry Loikrec
John W. Ildza
N. J. Resner
D. J. Stewart
Roland A. Neal
Herman L. Schmitt
Whitney Corsello
Morris Esman
Raymond F. Wivell
J. C. Cicero
Leo A. Wajert
Fred S. Weintraub
Ben Jones
John J. Boucek
George Metzger
W. M. Fronczek
F. V. Wucher
T. C. Wilkinson
Paul J. Dunn
C. E. Harris
James W. Speelman
Glenn O. Smith
William W. Wightman
Edward M. Fitzgerald
Samuel Zabarenko
John V. Wilson
P. I. Zeedick
S. J. Georgetson
R. W. Wallace
C. T. Osterloh
John B. Wood
Ernest Gibbs
Ernest Falvo
L. E. Brougher
C. J. Bowen
C. L. McCullough
Charles N. Gross
John G. Ricketts
Robert R. Clark
Charles F. Berg
Richard A. King
Lester E. Lacock
Jacob Ripp
Sidney L. Johns
H. Stanley Wallace
William Haus
Marcus D. MacDivitt
Lester L. Bartlett
Samuel J. Rosen
George J. Sarraf
Anthony S. Mallek
Samuel J. Klatman
James Strang
George E. Martin
John J. Stubbs
Frank Shear
George G. Boggs
James Connolly
Walter Kline
H. S. Liebling
George S. Zugsmith
James A. Barry
A. H. Winters
Thomas R. Purpura
James Connolly
Charles R. Wolff

Armstrong County

Charles A. Rogers	Freeport
Walter H. Bailey	Leechburg
E. C. Winters	Ford City
W. C. Stewart	Parkers Landing
T. Craig McKee	Kittanning
Turney L. Kirkwood	Kittanning
E. D. Bierer	Worthington
Frank W. Nicholson	Apollo

Beaver County

D. B. Knapp	Beaver
Malvern M. Mackall	Beaver
George B. Rush	Aliquippa
Harry B. Jones	Aliquippa
Clarence J. Buck	Beaver Falls
E. J. Straessley	Beaver Falls
David Patrick	Monaca
A. E. Chadwick	New Brighton
Charles H. Wolfe	Ambridge
Louis Weiss	Ambridge
J. A. Helfrich	Midland
Ralph E. Fennell	Ambridge
James M. Troll	Ambridge
H. Dale Mowry	Ambridge
George M. Durschinger	Rochester
Guy S. Shugert	Rochester
Andrew W. Culley	Beaver
Daniel B. Suffoletta	Midland
Thomas S. Boyd	Midland
A. S. McKinley	Monaca
S. J. Tomasi	Monaca
C. C. Ross	Hookstown
E. T. Johnson	Ambridge
E. H. Laird	Aliquippa
E. R. Lugar	Aliquippa
S. H. Mallinger	Aliquippa
D. F. Sennett	Aliquippa
H. I. Snyder	Aliquippa
B. T. Owens	Aliquippa
E. J. Aten	Ambridge
George C. Hayes	Ambridge
John M. Jackson	Beaver Falls
Harry C. McCarter	Beaver Falls

Bedford County

George S. Enfield	Bedford
Harry C. McClain	Saxton
J. Reginald Myers	Everett
John W. Nycum	Everett
Victor Mafucci, Jr.	Everett

Berks County

George Edwin Shetrone	Shillington
William G. Kinsley	Robesonia
J. G. Matternes	Sinking Spring
Charles B. Bertolet	Mt. Penn
Harry B. Schaeffer	Shillington
A. A. Cope	Hamburg
A. J. Ruff	Hamburg
E. Kern Linder	Hamburg
Thomas J. D. Scanlan	Shillington
Charles Dotterrer	Boyertown
Charles L. Dries	Bechtelsville
Carroll S. Kring	Birdsboro
Thomas V. Lerch	Wyomissing

READING

Hugh P. Shellabear
Glenn A. Deibert
William E. Fisher
John R. Spannuth
John H. Bisbing
Harry B. Corrigan
Fred Pokrass
Frank B. Gryczka
Harry Crystal
George J. Stark
Ralph L. Reber
John B. Levan
Leroy A. Gehris
Michael Austin
Roy B. Bast
George S. Pettis
William E. Glosser, Jr.
John J. Penta
Matthew J. Boland

BLAIR COUNTY

J. O. Prosser	Hollidaysburg
W. L. Grounds	Roaring Springs
R. O. Gettemy	Altoona
George Donovan	Altoona
Louis Lass	Altoona
Clair Burket	Altoona
Irvan A. Boucher	Tyrone
George R. Good	Williamsburg
Paul G. Holsinger	Bellwood
E. Burton Webb	Bellwood
L. R. Walker	Hollidaysburg
J. C. Fry	Williamsburg
W. E. Preston	Hollidaysburg
K. B. England	Roaring Spring
E. J. Schultz	Claysburg
J. Alvin Heimbach	Altoona
R. V. Silknetter	Altoona
H. A. Kerr	Martinsburg
A. A. Levine	Altoona
Edward Loudon	Altoona
Charles E. Shope	Altoona
Charles I. Stoner	Altoona
Francis E. Goodman	Altoona
John B. Nason	Tyrone
E. B. Murchison	Tyrone

BRADFORD COUNTY

E. T. Lentz	Wyalusing
C. Melvin Coon	Athens
J. K. W. Wood	Troy
Dominic S. Motsay	Ulster
John M. Higgins	Sayre
Manley Rockman	Sayre

BUCKS COUNTY

Frank Lehman	Bristol
Albert Gonzalez	Croyden
Redding H. Rufe	Chalfont
John T. Shaffer	Sellersville
Walter Hendricks	Perkasie
Victor B. Ellin	Morrisville
William L. Noe, Jr.	Langhorne
Herbert T. Crough	Doylestown
John F. McFadden	Andalusia
H. Doyle Webb	Bristol
James P. Lawler	Bristol
George T. Fox	Bristol
H. R. Giordano	Bristol

BUTLER COUNTY

Fred W. Vincent	Slippery Rock

BUTLER

Willis A. McCall
G. G. Graham
J. O. Donaldson
Carl L. Danielson
J. M. Dunkle
Max Nast
Dean R. Shannon
W. LeRoy Eisler
Albert A. Huba
Newton C. McCollough
John W. Shadle
A. M. Duster

CAMBRIA COUNTY

D. W. Truscott	South Fork
S. D. Boucher	Portage
S. D. Solomon	Ebensburg
Morton J. Earley	St. Benedict
John A. Murray	Patton
E. Pope Dickinson	St. Michael
F. O. George	South Fork
W. R. Hawkins	South Fork
W. S. Dougherty	Portage
A. D. Martin	Colver
Charles Solomon	Lilly
M. D. Rhoades	Conemaugh
Charles P. Jones	Nanty Glo

JOHNSTOWN

T. C. Cush
L. A. Wesner
E. C. Boyer
Reginald Davis
Francis J. Scanlon
W. H. Winey
William M. Conway
Meyer Bloom
John Huebner
J. W. McHugh
J. P. McCloskey
George H. Hudson
Glenn Stayer
Richard D. Kraft
Robert R. Geer
Harry M. Stewart

CARBON COUNTY

Albert Redelin	Nesquehoning
Dennis Bonner	Summit Hill
B. Frank Rosenberry	Palmerton
Robert E. Mitchell	East Mauch Chunk
Ira E. Freyman	Weatherly
John Kerestes	Weatherly
G. W. Prutzman	Palmerton
S. E. Lentz	Lehighton

CENTRE COUNTY

J. P. Ritenour	State College
P. H. Dale	State College
L. G. Runk	Philipsburg
Stephen A. Forbes	State College
Paul M. Corman	Bellefonte
Joseph A. Parrish	Bellefonte
Charles D. Dietterich	State College
W. F. Henninger	Millheim

CHESTER COUNTY

Milton Seltzer	Phoenixville
Joseph G. Ross	Spring City
Charles W. Bruton	Downingtown
Charles I. Pratt	Coatesville
Herbert Goebert	Coatesville
Guy Holcombe	Oxford
Orville Walls	Kennett Square
James Walmsley	West Grove
Kenneth S. Scott	Oakbourne
Scott B. Lewis	West Chester
William Riley	Downingtown
Joseph Scattergood, Sr.	West Chester
Horace Darlington	West Chester
L. S. Bringhurst	West Chester
L. Wayne Davison	Paoli
W. L. Hamilton	Malvern
W. A. Limberger	West Chester
Norman M. McFarlane	Paoli
Thomas D. Clayton	Coatesville
George W. Truitt	Chadds Ford
Teofil Babacz	Phoenixville
Robert Brant	Phoenixville
Ralph R. Chesashore	Phoenixville
Charles G. Thorne	Coatesville
G. E. Dietrich	Coatesville
Charles H. Stone	Coatesville

CLARION COUNTY

R. B. Erickson	Sligo
H. A. Wick	New Bethlehem
J. S. Wilson	New Bethlehem
Edward J. Keeling	Clarion

CLEARFIELD COUNTY

Harry G. Shaffer	Clearfield
Joseph F. Chick	DuBois
Ernest F. Getto	DuBois
William C. Brown	Curwensville
R. L. Williams	Houtzdale
John W. Gordon	Clearfield
Gillespie B. Yeaney	Clearfield
Maximo J. Tornatore	Clearfield
William Piper	Clearfield
E. A. Ronan	Houtzdale

CLINTON COUNTY

R. F. Dickey	Lock Haven
Edward Hoberman	Lock Haven
William E. Welliver	Lock Haven
James L. Lubrecht	Lock Haven
Frank P. Dwyer	Renovo
Graydon D. Mervine	Lock Haven
Theodore E. Teah	Lock Haven
John M. Dwyer	Renovo
Raymond A. Werts	Renovo
Reuben H. Meek	Avis
Clair B. Kirk	Mill Hall
Clarence Klaer	Loganton
Saylor J. McGhee	Lock Haven
E. L. Royer	Lock Haven
George H. Tibbins	Beech Creek

COLUMBIA COUNTY

H. S. Buckingham	Berwick
E. A. Marquand	Berwick
C. W. Ashley	Bloomsburg
G. P. Moser	Bloomsburg
J. L. Gluchoff	Bloomsburg

CRAWFORD COUNTY

Edward H. Connors	Meadville
Ned D. Mervine	Meadville
Harold E. Port	Titusville
V. Burton Eiler	Titusville
C. J. Frisk	Meadville
W. K. Fisher	Meadville
Clifford Cooper	Titusville
Hjalmer S. Anderson	Titusville
C. M. Sonne	Titusville
W. E. Hyskell	Titusville
William H. Brennan	Meadville

CUMBERLAND COUNTY

Herbert P. Lenton	Carlisle
I. F. McConnell	Carlisle
Nathan Shuser	Lemoyne
Richard R. Spahr	Mechanicsburg
Samuel O. Curry	Camp Hill
S. I. Cadwallader	West Fairview
William P. Stull	Carlisle
H. B. Etter	Shippensburg
Thomas S. McBride	Shippensburg
A. W. Freeman	Shippensburg
Russell E. Allyn	Mechanicsburg

DAUPHIN COUNTY

Leo H. Gillis	Wiconisco
O. J. Kingsbury	Steelton
William J. Albright	Highspire
Ralph E. Pilgram	Paxtang
C. M. Wallace	Hummelstown
A. J. Mogavero	Progress
E. Kirby Lawson, Jr.	Penbrook
Donald E. Morrison	Penbrook
Israel O. Silver	Steelton
John J. Snyder	Steelton
Clarence M. Hawke	Camp Hill
Park Berkheimer	Hummelstown
Wayne Stettler	Hershey
Peter L. Bonafede	Linglestown
Donald R. Buxton	Elizabethville

HARRISBURG

John V. Foster, Jr.
Charles W. Smith
James J. Bloom
William T. Douglass, Jr.
William B. Miller
P. Joseph Andrews
R. Stanley Bank
T. R. Hepler
Paul A. Kunkel
Theodore Doyle
Reginald N. Stroup
Morris S. Silver
J. Collier Bolton
Charles C. Englehart

DELAWARE COUNTY

Robert P. Elmer	Wayne
John J. Sweeney	Upper Darby
Thomas O. McCutcheon	Upper Darby
A. W. Fisher	Drexel Hill
Ralph H. DeOrsay	Drexel Hill
Phillip Jaisohn	Media
Addison S. Buck	Wayne
Carl Staub	Darby
J. C. McConaughey	Brookline
L. R. Broadbelt	Llanerch
Francis G. Miller	Chester
George W. Lilley	Chester
Walter Landry	Chester
Taylor Beagle	Prospect Park
Wesley Tomlinson	Sharon Hill
Charles E. Fellows	Media
Harry Gallagher	Chester
Russell G. Witman	Swarthmore
Joseph A. Lynch	Chester
Maurice J. Boulotchnik	Chester
Frank A. Skwirut	Chester
Denis T. Sullivan	East Lansdowne
S. Irvin Bigelow	Lansdowne
Edward Harshaw, Jr.	Yeadon
I. Lawrence Widmyer	Primos
Arthur S. Reynolds	Llanerch
Albert W. Brown	East Lansdowne
William C. Thoroughgood	Sharon Hill
Robert Allen	Ridley Park
Robert E. L. Gowan	Yeadon
R. J. Gallagher	Yeadon
John W. Burtnett	Yeadon
Patrick Kennedy	Lansdowne
Paul A. Buckley	Chester
Walter A. Blair	Chester
George B. Heckman	Swarthmore
Isaac I. Parsons	Media
E. A. Lintzmeyer	Media
John J. McLaughlin	Lansdowne
Harry M. Forbes	Chester
Joseph Lachman	Chester
Raymond Kabakjian	Lansdowne
Marshall F. Shields	Chester
Marvin Shipps	Ridley Park
Charles Winn	Chester
Duncan F. Hatton	Chester
Howard D. Moser	Prospect Park
S. G. Smith	Darby
John C. Ullery	Upper Darby
Joseph F. Dougherty	Upper Darby
E. F. Hemminger	Upper Darby

A. W. McKinley	Upper Darby
Irvin B. Berd	Linwood
F. W. Nyemetz	Chester
Henry M. Tracy	Chester
Pum Koo Park	Chester
Douglas C. Wasley	Linwood
James G. Langford	Chester
Edward Schwartz	Chester
Harry B. Fuller	Lansdowne
W. V. Rudolph	Lansdowne
Marshall E. Harvey	Media
J. William Wood	Chester
J. Percy Craig	Chester
Martin B. Sejda	Chester
Charles A. Rowland	Chester
Kenneth J. Crothers	Chester
Palmer N. DeFuria	Chester
E. Carpenter, Jr.	Yeadon
A. P. Giamboy	Marcus Hook
Charles S. Turville	Drexel Hill
George P. Crillman	Manoa
Charles S. Aitken	Brookline
James E. Burke	Llanerch
Richard W. Garlichs	Manoa
Austin L. Kimble	Manoa

ELK COUNTY

James W. Minteer	Ridgway
John S. Williams	Ridgway
William S. Ashe	Ridgway
C. N. Silman	St. Marys
F. E. Murdock	St. Marys

ERIE COUNTY

Henry Adams	North East
E. G. Shelley	North East
Hugh O'Hare	Corry
Harold Gehring	Edinboro
F. H. Cardot	Fairview
J. K. Tannehill	Girard
Carl A. Karsh	North East
C. R. Wood	Wesleyville
Lemuel C. Alcorn	North East
George B. Crittenden	North East
Andrew J. Sherwood	Union City
Paul D. Harrison	Union City
George H. Ledger	Union City
G. E. Bennett	Corry
V. W. Graham	Corry
J. C. Kibler	Corry
N. Troy Gillette	Corry

ERIE

A. H. Bunshaw
George E. Becker
Meyer Zeltzer
R. D. McComb
A. M. Kalson
J. W. Schilling
H. R. Rahner
K. B. Kichlu
Edward E. Kemble
R. E. Schmidt
H. B. Emerson
James T. Strimple
Elmer Hess
J. E. O'Brien
Harry Lyons

FAYETTE COUNTY

David E. Hemington	Uniontown
John L. Messmore	Masontown
J. N. Snyder	Masontown
A. D. Hunger	Point Marion
E. T. Gruetzner	Fairchance
L. D. Johnson	Connellsville
Domer S. Newill	Connellsville
C. Franklin Smith	Uniontown
Cam T. Troilo	Vanderbilt
R. C. Hough	Uniontown
V. P. Pisula	Everson
R. P. Kamerer	Perryopolis
A. C. Dent	Fayette City
John B. Hibbs	Uniontown
Earl F. Harris	Connellsville
Gilbert K. Bertiaux	Point Marion
G. C. Dils	New Salem
R. C. Opperman	Republic

FOREST COUNTY

M. A. Swaney	Marienville

FRANKLIN COUNTY

Thomas H. Gilland	Greencastle
Paul A. Clutz	Mercersburg
William C. Craig	Waynesboro
L. H. Seaton	Chambersburg
Joseph P. Maclay	Chambersburg
Franklin S. Sollenberger	Waynesboro
Theodore Peters	Chambersburg
R. S. Baylor	Waynesboro
C. S. McConnel	Waynesboro
W. C. Shultz, Jr.	Waynesboro

GREENE COUNTY

W. B. Clendenning	Waynesburg
R. D. Yoder	Nemacolin
Vincent P. Hart	Waynesburg
William S. Knox	Waynesburg
David L. Avner	Greensboro
Clarence W. Grimes	Rices Landing

HUNTINGDON COUNTY

George H. Bumgardner	Orbisonia
C. Bernard McClain	Mt. Union
Cloy G. Brumbaugh	Huntingdon
Walter Watkins	Saltillo
M. D. Campbell	Mapleton Depot

INDIANA COUNTY

W. L. Benz	Blairsville
George W. Hanna	Homer City
Melvin M. Myers	Marion Center
Cyril B. Bell	Glen Campbell
Charles Seitz	Rossiter
Ralph G. Ellis	Brush Valley
Clark Smith	Plumville
M. M. Davis	Indiana

JEFFERSON COUNTY

Albert F. Cleveland	Brockway
J. C. Borland	Falls Creek
A. R. McNeil	Brookville
Howard Fugate	Sykesville
James Carlino	Reynoldsville
Charles M. Kutz	Brookville
W. H. Bell	Brookville
Jacinto J. Menegas	Brockway

JUNIATA COUNTY

Frank C. Wagenseller	Richfield

LACKAWANNA COUNTY

W. G. Salmon	Old Forge
E. R. Simpson	Peckville

Stanley Boland	Archbald
J. J. Malinowski	Dickson City
Frank Ginley	Dunmore
M. A. Kline	Dalton
H. E. Peter Vale	Jessup
Murray Finkelstein	Olyphant
W. S. Johnson	Carbondale
Emil F. Gombar	Dickson City
Ralph Touch	Carbondale
Joseph F. Murrin	Carbondale
John Wagner	Clarks Summit
Edward E. Edwards	Taylor
Sidney W. Lockett	Moosic

SCRANTON

M. J. Stec
C. A. Gaynor
J. J. McDonnell
John I. Robinson
W. R. Davies
J. L. Rea, Jr.
Joseph Burke
Edward Whalen
James D. Lewis
R. C. Shepherd
Thomas F. McHugh
Vincent A. Andrioli
William J. McHugh
Paul F. Polentz
William A. Murray
Joseph Gustaitis
J. H. Foy
Robert Moylan

LANCASTER COUNTY

J. Hoffman Garber	Elizabethtown
Richard R. Hoffman	Manheim
H. L. Stauffer	Bareville
Roland N. Klemmer	Lancaster
J. Howard Esbenshade	Lancaster
John D. Denney	Columbia
J. C. Gilbert	Landisville
L. C. Piersol	Lancaster
Gregory Chadman	Lancaster
Charles B. Peterson, Jr.	Lancaster
Charles W. Ursprung	Lancaster
C. Eugene Miller	Ephrata
H. S. Ziemer	Adamstown
Samuel M. Hauck	Lancaster
G. C. Schwartz	Lancaster
William M. Workman	Mt. Joy
Harry C. Kendig	Mt. Joy
Edward C. Kottcamp, Jr.	Marietta
Norris J. Kirk	Lancaster
Paul M. Riffert	Ephrata
John H. Reynolds	Akron
Carl H. Myerley	Lincoln
H. E. Roberts	Denver
H. H. Seiple	Lancaster
A. H. Zwally	Ephrata
Ralph J. Goldin	Brownstown
John M. Ranck	Leola

LAWRENCE COUNTY

C. M. Schell	Ellwood City
Harold R. Sumner	Ellwood City
Eliah Kaplan	New Castle
Paris A. Shoaff	New Castle
Frank D. Campbell	Bessemer
Gerald Zieve	Wampum
T. M. Shaffer	New Castle
S. W. Perry, Sr.	New Castle
Z. H. Stutz	New Castle
J. O. Brown	Ellwood City
H. C. Mitchell	New Castle
Amleto Acquaviva	New Castle
C. M. Iseman	Ellwood City
C. M. Dumm	Ellwood City
Wilbur E. Flannery	New Castle

LEBANON COUNTY

H. S. Gingrich	Fredericksburg
D. S. Bordner	Palmyra
Herbert C. McClelland	Lebanon
John Mengle	Lebanon
John F. Loehle	Lebanon
Charles F. Rouh	Myerstown

LEHIGH COUNTY

Robert Muschlitz	Slatington
J. H. Hennemuth	Emmaus
E. H. Mohr	Alburtis
Warren H. Endres	Fogelsville
William B. Trexler	Fullerton
Luther H. Kline	Cementon
Edwin S. Minner	Egypt
John J. Schneller	Catasauqua

ALLENTOWN

Clyde Kelchner
Dill J. Albright
William Barr
Alexander Peters
N. H. Heiligman
Mark A. Bausch
Fred M. Haas
Robert J. Turnback
Charles H. Zellner
William F. Herbst
Morgan D. Person
Willard D. Kline
Maurice Parmet
Carlin O. Williams
Charles S. Hertz
John Bortz
Albert J. Fidler
Frederick R. Bausch, Jr.
Dominick Donio
A. C. Gallagher
Fred J. Tate
Martin W. Brossman
John Bernhard
LeRoy M. Moyer

LUZERNE COUNTY

L. S. Luppold	White Haven
Joseph Aszuk	Wilkes-Barre
Frank G. Tonrey	West Pittston
Robert H. Stroh	Wyoming
William C. Stiff	Plymouth
Charles F. Netzel	Larksville
Emil T. Martyak	Hazleton
Albert M. Thomas	Wanamie
E. J. Kielar	Glen Lyon
R. J. Hangen	Ashley
Edmund Hanlon	Hazleton
John F. Osler	Hazleton
John A. G. Davis	Kingston
John L. Carey	Kingston
Frank B. Schooley	Dallas
Peter J. Casterline	Wilkes-Barre
Dominic D'Angelo	Hazleton
G. A. Shuman	Edwardsville
J. W. Kirschner	Luzerne
W. S. Carter	Hazleton
R. J. Wise	Conyngham
James J. Dougherty	Avoca
Lewis C. Druffner	Avoca
W. J. Doyle, II	Wilkes-Barre
A. F. Riofski	Wilkes-Barre
Walter W. Kistler	Wilkes-Barre
P. F. McHugh	Wilkes-Barre
Joseph B. Raddin	Hazleton
C. M. Gallagher	Wilkes-Barre
J. Thomas Williams	Wilkes-Barre
B. A. Weil	Plymouth
D. B. Siberski	Plymouth
Louis T. McAloose	Hazleton
J. V. Sutula	West Hazleton
S. M. Davenport	Kingston
Martin J. Walsh	Pittston

John F. Giering	Wilkes-Barre
Z. L. Smith	West Nanticoke
A. A. Berrettini	Plains
Thomas A. Duffy	Plains
Nelson C. Woehrle	Plains
J. P. Gibbons	Plains
X. K. Collmann	Wilkes-Barre

LYCOMING COUNTY

H. R. Marlatt	Montgomery
Joseph M. Korenzo	Nisbet
Clarence E. Shaw	Williamsport
Stuart B. Gibson	Williamsport
Lee M. Goodman	Jersey Shore
Howard W. Current	Montoursville
Louis E. Audet	Williamsport
Albert C. Haas	Williamsport
Clarence N. O'Neill	Montgomery
Allen J. Hannen	Williamsport
Stanley J. Smith	Williamsport
John E. Knight	Jersey Shore
John W. Lauler	Jersey Shore
Carl G. Renn	Hughesville
Charles F. McClane, Jr.	Williamsport
A. W. Blumberg	Williamsport
J. P. Robinson	Williamsport

McKEAN COUNTY

Guy S. Vogan	Kane
James E. Woodhouse	Bradford
Thomas S. Fannin	Bradford
M. E. McCarthy	Kane
John L. Neill	Smethport
A. B. Branon	Mt. Jewett
Gordon S. Huff	Eldred
Samuel R. Huff	Eldred

MERCER COUNTY

J. H. McClelland	Grove City
J. C. Coley	Stoneboro
Joseph S. Knapp	Greenville
W. W. Wyant	Farrell
George W. Kennedy	Sharon
Edward N. Hagin	Sharon
J. F. Elder	Sharon
R. R. Norton	Sharon
Joseph A. Doyle	Greenville
Frank S. Bakewell	Greenville
N. J. Bailey	Sharpsville
J. J. Bellas	Farrell
Frank M. Bleakney	Grove City
B. L. Tinker	West Middlesex
William A. Applegate	Sharon
William M. Writt	Farrell
P. E. Biggins	Sharpsville

MIFFLIN COUNTY

S. W. Swigart	Lewistown
George R. Barnett	Lewistown
A. Reid Leopold	Lewistown
Bryce E. Nicodemus	Lewistown
James R. McNabb	Burnham
Milton H. Cohen	Lewistown
Robert Steele	McVeytown

MONROE COUNTY

STROUDSBURG

Harold B. Flagler
Charles S. Flagler
Paul H. Shiffer
Marshall R. Metzgar

MONTGOMERY COUNTY

Barton K. Thomas	Pottstown
James A. Shelly	Ambler
John B. Sherbon	Pottstown
Sherod M. Cooper	Conshohocken
Elwood S. Myers	Jeffersonville
John C. Traugh	Philadelphia
Edgar S. Buyers	Norristown
E. S. Myers	Norristown
Charles S. Pennypacker	Ardmore
Carl F. Bigoney	Lansdale
Edgar W. Kline	Lansdale
John M. Markley	Schwenksville
W. Stuart Watson	Norristown
Robert R. Smith	Ambler
Edward V. Ocelus	Bridgeport
J. J. Mallard	Royersford
E. H. Platte	Collegeville
Joseph L. Barthold	Norristown
Herbert A. Bostock	Norristown
J. Quincy Thomas	Conshohocken
B. L. Falcone	Bridgeport
Henry N. Kehres	Bryn Mawr
Peter J. Labowskie	Conshohocken
Cecil W. Hancox	Pottstown
Alfred Troncelliti	Ardmore
Francis J. Bonner	Ardmore
A. J. Denman	Narberth
F. Benedict Lanahan	Narberth
Raymond K. Powell	Rosemont
Matthew J. Zakrzewski	Conshohocken
John M. Brecht	Norristown
Ralph H. Merkel	Pottstown

MONTOUR COUNTY

Jesse W. Gordner, Jr.	Danville

NORTHAMPTON COUNTY

Harry C. Pohl	Nazareth
Senn G. Beck	Nazareth
Louis F. Burkley	Easton
Charles A. Haff	Northampton
Donald W. Haff	Northampton
W. M. Brenholtz	Hellertown
Edward J. Deibert	Hellertown
Kenneth S. Kuhn	Easton
Glenn G. Klock	Easton
M. L. Hockenbery	Bangor
Nicholas Romano	Bangor
C. F. Stofflet	Pen Argyl
David H. Feinberg	Easton
Earl B. Schlier	Bethlehem
J. A. Dobosh	Bethlehem
Morris Kramer	Easton
Max Littner	Bethlehem
Mario J. Cortellini	Bethlehem
J. J. Quiney	Easton
Jacob Kincov	Easton
Theodore Reichbaum	Easton
F. R. Maylath	Bethlehem
Michael Fresoli	Bethlehem
Paul H. Kleinhans	Bethlehem
Arthur B. Hamilton	Bethlehem
Francis J. Conahan	Bethlehem

NORTHUMBERLAND COUNTY

George C. Wentzel	Sunbury
Daniel Solomon	Sunbury
Samuel L. Savidge	Northumberland

Edward C. Crowl	Elysburg
Michael J. Stief	Mt. Carmel
William J. Jacoby	Mt. Carmel
Peter A. Justin	Mt. Carmel
Vincent Olshefski	Mt. Carmel
Joseph D. Millard	Shamokin

Perry County

Amos G. Kunkel	Liverpool
Robert R. Stoner	New Bloomfield
Austin F. Brunner	Newport
James R. Hamilton	New Bloomfield
Leonard B. Ulsh	Loysville
John E. Romig	Duncannon

Philadelphia County (Philadelphia)

Victor Dolfman
Israel Binder
Maurice J. Ward
David Zimring
George C. Given
Jacob Yanoff
Abel E. West
Edward E. Holloway
G. Isaac King
Frederick J. Fox
D. Battaglini
M. Bernard
Jasper E. Bontomase
Samuel Steinberg
Edward F. Kelley
J. R. Kitchell
George C. Griffith
George M. Tomlinson
William Udell
Thomas W. Georges
Max Cantor
Edward H. Kotin
H. B. Kobler
Albert Herman
Louis M. Golden
S. J. Levitt
Walter Nied
Valentine Pytko
Charles R. Haig, Jr.
Norman L. Lee
Alexander Koppel
L. Vincent Hayes
Albert A. Martucci
V. L. Baker
Samuel Lastick
T. W. Battafarano
Thomas H. Mooney
Everett C. Bishop
John G. Hand
Richard H. Meade, Jr.
Henry P. Webb
Jerome J. Rubin
Henry L. Gowens, Jr.
Maxwell F. White
Samuel A. Manstein
M. Segar Welham
J. J. Schoening
Ernest M. Dorsett
Thomas F. Maley
John L. Green
Edward D. Weiss
Berthold M. Stern
Richard P. Shapiro
Willard W. Matthews
Paul H. Neese
Wilbur W. Oaks
Samuel S. Shapiro
Max Kasser
Hyman L. Fittingoff
Samuel M. Perlstein
Raymond M. Fine
Joseph Geller
G. P. Giambalvo
David Naidoff
John D. Turchi
M. A. Cohen
Samuel Lieberman
J. F. Mecluskey
James S. McLaughlin
H. E. Tucker
Leon Miller
Ross N. Noll
Evan L. Watkins
James A. Conway
Howard S. Anders
Alfred Catenacci
George Derenzo
William R. Brown, Jr.
M. J. Trimiano
J. Wesley Anders
M. J. Levin
William H. Morrison, Jr.
John L. Dukes
Samuel Burden
Philip R. Trommer
Nathan H. Einhorn
R. R. Pottash
Samuel Alter
Harry A. Schatz
Henry M. Wise
William A. Buck
Moses Kopeika
Frank DiDio
Charles Tonik
Louis J. Decina
Herman Kleinman
M. J. Podell
D. F. Fisher
J. W. Deichler
Nathaniel Hurwitz
A. J. Brown
J. S. Lennon
George M. Evans
David Budin
Nathan Berkowitz
Morris Kleinbart
Richard W. Larer
Matthew F. Reilly
Ralph J. Melman
Meyer Steinbach
Herman Brown
William G. Brannon
Jacob Pomerantz
Samuel Axilbund
M. Royden C. Astley
Franklin D. Benedict
Morris Smith
Lewis Graves
Bernard C. Gettes
Louis J. Roderer
Philip Kurtz
Harold Lefkoe
A. W. W. Waddington
David Sklaroff
S. Bruce Greenway
Adrian H. Donaghue
William F. Delaney
Thomas J. Russell
Andrew J. Donnelly
J. Warren Hundley
David Goodman
F. M. Condron
Franklin M. Kern
Arthur Levenson
Solomon Perchonock
John H. Graves
Jacob J. Freedman
Philip Gerber
Jacob Lichstein
Samuel C. Polcino
G. Harvey Severs
Harvey Bartle
O. E. Heim, Jr.
Glenn S. Dickson
William P. Stewart
Sabin L. Gaskill
Samuel E. Robertson
S. Stanley Barr
Samuel Tasker
Sidney G. Radbill
Rotan Lee
Louis Barenbaum
Maurice Jaffe
Frank E. Wolcoff
W. V. Hostelley
C. N. Sturtevant
Gerald Pratt
L. M. Codori
Joseph F. Ulman
L. A. Dodies
Charles Blumenthal
Gene B. Haber
George E. Lieberman
Alfonso L. Pierro
Anthony Marsico
Charles A. Lewis
Anthony A. Donato
John J. Bryne
Frederick G. Slade
Philip Getson
Martin D. Kushner
Horace C. Scott
Granville Clark
Lloyd P. Barnes
D. L. Maddox
Albert M. Schwartz
Samuel E. Rynes
Berton C. Truitt
Linton Turner
Hans Funch
S. Hall Conn
Franklin S. Buzby
John DeCarlo
John A. Nark
Harry T. Kessler
N. H. Colton
Valentine Manning, Jr.
Nubar A. Karakashian
Myles J. Murphy
L. P. Gefter
Thomas A. Williams
John L. Brill
George W. Chernoff
David Zipin
Vram S. Nedurian
Robert E. Sands
Louis Spitz, Jr.
H. M. Ginsberg
Meyer Freedman
A. L. Schaller
Frederick Wayne Jarvis
Edward C. Britt
Meyer L. Niedelman
Maurice C. Tepper
J. H. Smith, 2nd
Maurice Seltzer
Maurice H. Schneiman
Joseph V. F. Clay, Jr.
Leroy I. Walker, Jr.
Ralph Cantafio
Morris Rosen
Abram Glick
Harry Goodman
Isaac Anton
Samuel Holmstock
Herbert R. Hawthorne
Bernard J. Ronis
Samuel S. Romagosa
E. A. Fishman
Richard D. Warnick
S. W. Eisenberg
William F. Danehower
William J. Walker
Robert M. Hunter
Israel Levin
W. Gordon McDaniel
Rudolph Winston
Milton Lieberthal
Thomas F. Pugh
Joseph N. Epstein
Lester Hergesheimer
Salvatore Lombardi
Raymond Leopold
George J. Nichols
Harry Dion
Harold Frankel
Samuel Jaffe
C. W. McConihay
Frederick A. Fiske
Raphael H. Greenstein
C. L. Thomas
Louis Zisserman
Henry C. Schneider
John Napoleon
Peter J. Iannuzzi
David N. Greenwood
Louis Goss
William P. Robinson

William J. Tourish
Leonard A. Cinberg
Samuel Meyers
David D. Broselow
Benjamin H. Harris
Isadore Kotzin
Morris Lavin
S. A. Hamill
Raymond E. Seidel
John J. Duncan
L. M. Jacobs
Hammond J. Garfield
George D. Beck
Allen D. Wallis
A. E. Rakoff
Carl C. Fischer
Milton A. Bell
Thomas J. Vischer
Merle M. Miller
Edwin T. Bruce Jr.
A. Otto Goldstein
G. A. Saunders
David A. Snyder
Lewis Beloff
Joshua Levitsky
George L. Weinstein
Earl L. Fisher
Louis Herman
E. Lee Keiser
Edward I. Bloom
James A. Lane
Albert B. Katz
L. C. Robinson
Wallace Sliwinski
Francis J. Kownacki
Charles C. Banes
Judson Hancock
Samuel Forman
A. J. Mulligan
Edwin B. Abramson
E. Sigmund Lewinn

PIKE COUNTY

W. L. Roberts	Milford
W. L. Crellin	Shohola
M. J. Leitner	Bushkill

POTTER COUNTY

Joseph W. Harshberger	Coudersport
Herman C. Mosch	Coudersport

SCHUYLKILL COUNTY

R. H. Stutzman	Tower City
William A. Weaver, Jr.	Tamaqua
Harry W. Bailey	Tamaqua
Emmet Hobbs	Shenandoah
L. D. Heim	Schuylkill Haven
Wasil Maholage	Mahanoy City
P. C. Boord	New Philadelphia
Michael Matsko	McAdoo
John Conway	Shenandoah
Edward Cook	Shenandoah
A. P. Murray	Girardville
W. J. Dougherty	Frackville
John J. Canfield	Pottsville
George C. Hohman	Pottsville
Robert F. Weaver	St. Clair
John W. Conrad	Port Carbon
E. T. Ryscavage	St. Clair
E. E. Shifferstine	Tamaqua
C. S. Burke	Mahanoy City
Roland F. Fleck	Mahanoy City
A. M. Miller	St. Clair
Lewis M. Shultz	Port Carbon
R. Guy Bashore	Minersville
F. M. Quinn	Minersville
J. Harry Close	Minersville
Lewis H. Bacon	Pottsville
William H. Schlitzer	Pottsville
L. J. Schwalm	Pottsville
James J. Monahan	Shenandoah
Frank S. Olmes	Orwigsburg
George R. Beddow	Pine Grove

SNYDER COUNTY

George M. Bogar	Selinsgrove
Howard F. Straub	Selinsgrove

SOMERSET COUNTY

W. W. Westfall	Somerset
C. C. Glass	Meyersdale
John S. Large	Somerset
Earl O. Haupt	Stoyestown
Chauncey Hoffman	Windber
George C. Grazier	Hollsopple
A. O. Barclay	Somerset
C. C. Barchfield	Somerset
H. E. Musser	Somerset
W. W. Keim	Davidsville

SUSQUEHANNA COUNTY

Raymond C. Davis	Susquehanna

TIOGA COUNTY

William Bache, Jr.	Wellsboro
Joseph J. Moore	Mansfield

UNION COUNTY

T. G. McQueen	Mifflinburg
O. W. H. Glover	Laurelton

VENANGO COUNTY

M. A. Newell	Clintonville
P. E. Cunningham	Franklin
C. A. Nordstrom	Franklin
George S. Smith	Franklin
Norman K. Beals	Franklin
F. L. Votaw	Franklin
T. E. Timney	Franklin

OIL CITY

Thomas Thomas
F. M. Summerville
H. H. Lamb
Lee Levine
Clinton Hays
Bernard Lachman
Paul Bruner
George W. Burnett
A. W. Goodwin
W. E. Kramer
J. V. Ledden
B. J. Owozykowski
John A. Askey

WARREN COUNTY (Warren)

A. Follmer Yerg
Tom K. Larson
Gail K. Ridelsperger

WASHINGTON COUNTY

David Beveridge	Washington
J. P. Proudfit	Washington
Walter F. Rongaus	Donora
Edward Roth	Donora
Joseph Hunter	Charleroi
H. J. Repman	Charleroi
J. W. Farquhar	California
Joseph P. Hughes	Monongahela
W. H. Tomaseki	Langeloth
Robert J. Nevin	Washington
Martin Stutz	Washington
Marshall Graham	Washington
Douglas H. Corwin	Washington
Clarence A. Crumrine	Washington
J. H. Shannon	Washington
Joseph H. Carazola	Washington
Arthur A. Plauso	Charleroi
David L. McCarrell	Hickory
W. J. Hawkins, Jr.	Fredericktown
Perry Smith	Richeyville
Grant E. Hess, Jr.	Washington
Wilbur E. Fisher	Washington

John S. McMurray	Washington
P. A. Ley	Donora
Ralph L. Lutz	Roscoe
Albert J. Hudacek	Canonsburg
John C. Kelso	Canonsburg
G. P. Schmeiler	Canonsburg

Wayne County

Robert C. Canivan	Honesdale
Howard R. Patton	Damascus

Westmoreland County

J. H. Watson	Jeannette
H. N. Bronk	Jeannette
William E. Marsh	Mt. Pleasant
A. D. Barnhart	Youngwood
F. N. Mangold	Scottdale
H. M. Toloskho	New Florence
A. R. Megahan	Latrobe
D. E. Stader	Latrobe
J. M. Steim	New Kensington
W. T. O'Hara	New Kensington
A. L. Pantalone	Export
Arthur McSteen	West Newton
Daniel O'Connell	Jeannette
J. C. Griffith	Monessen
L. S. Strawn	West Newton
William H. Robinson	Mt. Pleasant
L. W. McGough	Trafford
Charles H. Silvis	Irwin Borough
John B. Laughrey	Sutersville
H. L. Highberger	Herminie
Kenneth L. Diehl	Derry
Raymond A. Wolff	New Kensington
Albert J. Bearer	New Kensington
Spurgeon S. DeVaux	United
George E. Biskup	Mt. Pleasant
J. H. Hamill	Latrobe
G. F. Nealon	Latrobe
A. H. King	West Newton

Wyoming County

Lorne T. MacDougall	Tunkhannock

York County

W. S. Dellinger	Red Lion
W. Newton Long	York
H. Malcolm Read	York
P. A. Hoover	Dallastown
John M. Bealor	East Prospect
Elmer E. Miller	Hellam
Cornell Gray	Hanover
Floyd Leppard	Hanover
Raymond M. Lauer	Hanover
Frank V. McConkey	York
Sidney Levy	Wrightsville
H. H. Holland	Red Lion
Lewis C. Herrold	Dover
H. E. Rutland	York
Arthur C. Kalisch	York
Norman H. Gemmill	Stewartstown
Donald H. Huffer	York
George H. Hoerner	Manchester
Gibson Smith	York
J. Stuart Seitz	Glen Rock
J. C. Atkins	Glen Lion
E. W. Hyson	Fawn Grove
J. Donald Conn	Windsor
Raymond Shettel	Mt. Wolf
W. C. Langston	York

Original Appointees on Medical Advisory Boards to Appeal Areas

Board No. 1 (City and County of Philadelphia):

Earl D. Bond
Seth A. Brumm
Gilson Colby Engel
John T. Farrell, Jr.
Perce DeLong
Sigmund S. Greenbaum
John R. Moore
John Davis Paul
G. Harlan Wells
W. Hersey Thomas

Board No. 2 (Delaware, Chester, Montgomery, and Bucks Counties):

John S. Miller, Jr.	Chester
W. Gifford Crothers	Chester
George H. Cross	Chester
Robert S. Bookhamer	Norristown
Paul G. Atkinson	Norristown
Donald M. Heading	Norristown
John C. Simpson	Norristown
Raymond F. Campbell	Norristown
Warren Walker	Ardmore

Board No. 3 (Schuylkill, Berks, Lehigh, Carbon, and Northampton Counties):

Robert J. Phifer	Wernersville
Thomas L. Smyth	Allentown
*Kenneth R. Weston	Allentown
Howard M. Leinbach	Reading
Robert M. Alexander	Reading
Edwin B. Rentschler	Reading
James E. Landis	Reading
Erwin D. Funk	Reading
Arthur A. Bobb	Reading
Thomas C. Zulick	Easton
Joseph N. Corriere	Easton
J. Edward McDowell	Pottsville

Board No. 4 (Franklin, Adams, York, Lancaster, Lebanon, Perry, Dauphin, Juniata, and Cumberland Counties):

James P. Hammers	Lancaster
Francis S. Chambers	Lancaster
Herman H. Van Horn	Harrisburg
Harvey F. Smith	Harrisburg
Allen Z. Ritzman	Harrisburg
Alfred D. Strickler	Lebanon
Julius H. Comroe	York

Board No. 5 (Monroe, Pike, Luzerne, Lackawanna, Wayne, Susquehanna, and Wyoming Counties):

Thomas A. Rutherford	Scranton
Raymond J. Garvey	Scranton
Donald C. Gordon	Scranton
Leonard G. Redding	Scranton
Edward W. Bixby	Wilkes-Barre
Joseph V. Connole	Wilkes-Barre
Harry A. Smith	Wilkes-Barre
R. R. Janjigian	Forty Fort
Peter P. Mayock	Wilkes-Barre
Samuel R. Kaufman	Wilkes-Barre

Board No. 6 (Potter, Tioga, Bradford, Cameron, Clinton, Lycoming, Sullivan, Clearfield, Centre, Union, Snyder, Montour, Columbia, and Northumberland Counties):

*James G. Logue	Williamsport
*John P. Harley	Williamsport
Roy L. Simon	Williamsport

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* Resigned.

Joseph A. Cammarata	Danville
Frederic C. Lechner	Montoursville
Edwin L. Royer	Lock Haven
John H. Woolridge	Clearfield
Charles H. DeWan	Sayre
Mark K. Gass	Sunbury
Thomas M. West	Williamsport
Benjamin H. Hamner	Williamsport

Board No. 7 (Indiana, Cambria, Blair, Somerset, Bedford, Fulton, Huntingdon, and Mifflin Counties):

Augustus S. Kech	Altoona
John H. Galbraith	Altoona
Fred R. Hutchison	Huntingdon
John M. Keichline	Huntingdon
Roy W. Goshorn	Hollidaysburg
William E. Grove	Johnstown

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Jesse Taylor Biddle	Washington
George W. Ramsey	Washington
George H. Hess	Uniontown
James E. Van Gilder	Uniontown
Homer R. Mather	Latrobe
Ira A. Darling	Torrance
Charles C. Crouse	Greensburg

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Charles S. Caldwell
John M. Conway
Charles F. Kutscher
Charles A. Ley
William O. Markell
Evan W. Meredith
*Wilton H. Robinson
J. Sewell Stewart

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David E. Vogan	Mercer
*Don Carlos Lindley	New Castle
William A. Womer	New Castle
Leonard S. Fullerton	Beaver Falls
Chester A. Nordstrom	Franklin
Philip F. Martsolf	New Brighton
A. M. Gigliotti	Ellwood City

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Arthur G. Davis	Erie
*H. Hays Bullard	Erie
Ernest L. Armstrong	Erie
*Benjamin S. Putts	Erie
Ralph D. Bacon	Erie
Hilding A. Bengs	North Warren
Robert H. Israel	Warren
Andrew W. Goodwin	Oil City
Maurice T. Leary	Meadville

The Pennsylvania Medical Preparedness Committee will publish in the October Journal the names of additional appointees to the 11 Appeal Boards and the personnel of the 8 Army Examination Boards.

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* Resigned.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

New (16) and Reinstated (10) Members

Beaver County

Julius A. Vogel	Aliquippa

Cumberland County

Charles A. Bikle	Shippensburg

Dauphin County

Thomas James Fritchey	Harrisburg
William J. Schilling	"
John Jacob Snyder	Steelton

(Reinstated) Andrew F. Akers, George A. Jones.

Lehigh County

Carl Breisacher	Allentown
Mark G. Risser	"

Northumberland County

(r) George H. Kohlbraker.

Perry County

(r) Edwin C. Kistler.

Philadelphia County (Philadelphia)

Louis J. Berenato
Samuel B. Burtoff
Frank J. Jodzis
Howard J. Johnson, Jr.
Alfred B. Miller
Frank H. Zappacosta

Emma Boyd Bevan	Ardmore

(r) Jacob M. Cunningham, Adam P. Doras, Harry Goodman, Charles Scott Miller, Desiderio A. Roman, Cornelius G. Wooding.

Washington County

Roy S. Clark	Washington

York County

George H. Hoerner	Manchester

Removals, Transfers (3), Deaths (10)

Armstrong: *Transfer*—Violet M. Hemminger, Kittanning, from Somerset County Society.

Beaver: *Transfer*—Edward T. Davis, Jr., Rochester, from Allegheny County Society.

Berks: *Death*—Henry S. Kieser, Reading (Hahn. Med. Coll. '30), July 11, aged 37.

Butler: *Death*—Alfred H. Ziegler, Butler (Jeff. Med. Coll. '06), recently, aged 59.

Clearfield: *Death*—Wallace S. Bryan, Ramey (Jeff. Med. Coll. '06), July 20, aged 63.

Erie: *Death*—Harry L. Stem, Union City (Cleveland Med. Coll. '92), July 17, aged 72.

Franklin: *Removal*—Stanley R. Szymanski from South Mountain to Livingston, N. Y.

Lancaster: *Deaths*—William B. Hamaker, Lancaster (Balt. Med. Coll. '05), July 15, aged 63; Simon S. Mann, Columbia (Hahn. Med. Coll. '94), July 14, aged 74.

Luzerne: *Removal*—Leonard D. Marinaro from Wilkes-Barre to Sharon.

Northumberland: *Removal*—Lester E. Schoch from Elysburg to Hackensack, N. J.

Philadelphia: *Transfer*—George W. Chamberlin, Reading, to Berks County Society. *Removals*—John

Q. Griffith, Jr., from Upper Darby to Margate, N. J.; Walter H. Lindsey, from Philadelphia to Perkasie. *Deaths*—Thomas A. O'Brien, Philadelphia (Univ. Pa. '05), June 21, aged 59; John J. Shaw, Philadelphia (Univ. Pa. '08), June 24, aged 58; Albert P. Weaver, Philadelphia (Jeff. Med. Coll. '92), June 26, aged 82.

SOMERSET: *Removal*—Robert E. Heath from Friedens to Uniontown. *Death*—George A. Noon, Listie (Ga. Coll. Ec. Med. & Surg. '90), Oct. 12, 1940, aged 82.

WESTMORELAND: *Removal*—Frank J. Pyle, Philadelphia, to Harrisville.

Net gain in membership during July 16

PAYMENT OF PER-CAPITA ASSESSMENT

The following payment of per-capita assessment has been received since June 27. Figures in first column indicate county society numbers; second column, State Society numbers:

June 28	Schuylkill	156–161	8922–8927	$60.00
July 3	Beaver	106	8928	10.00
	Lackawanna	257	8929	10.00
	Allegheny	1464–1470	8930–8936	35.00
9	Berks	201–202	8937–8938	20.00
	York	160	8939	5.00
	Philadelphia	2421–2451	8940–8970	310.00
16	Greene	27	8971	10.00
18	Perry	17	8972	10.00
	Lehigh	167–175–178	8973–8975	30.00
	Luzerne	342	8976	10.00
19	Cumberland	38	8977	10.00
21	Wayne-Pike	23	8978	10.00
23	Fayette	115	8979	10.00
	Jefferson	47–48	8980–8981	20.00
	Allegheny	1471	8982	10.00
24	Blair	110	8983	10.00
28	Luzerne	343	8984	10.00
	Dauphin	222–230	8985–8993	90.00
	Lackawanna	258	8994	10.00
29	Beaver	107	8995	10.00
31	Northumberland	80	8996	10.00
	Lehigh	167	8997	10.00
Aug. 4	Philadelphia	2421–2433	8998–9010	125.00
6	Lackawanna	259–260	9011–9012	20.00
7	Northampton	157	9013	10.00

CONTRIBUTIONS TO MEDICAL BENEVOLENCE FUND

The Committee on Medical Benevolence makes grateful acknowledgment of the following contributions to the fund received since July 1:

Woman's Auxiliary, Cambria County Medical Society	$50.00
Woman's Auxiliary, Northampton County Medical Society	75.00
Woman's Auxiliary, Lehigh County Medical Society	200.00
Woman's Auxiliary, Lebanon County Medical Society	100.00
Woman's Auxiliary, Mercer County Medical Society	75.00
Woman's Auxiliary, Armstrong County Medical Society	32.00
Woman's Auxiliary, Lackawanna County Medical Society	$210.00
Woman's Auxiliary, Venango County Medical Society	50.00
Woman's Auxiliary, Bradford County Medical Society	4.00
Woman's Auxiliary, Huntingdon County Medical Society	35.00
Woman's Auxiliary, Mifflin County Medical Society	30.00
Woman's Auxiliary, Lawrence County Medical Society	50.00
Woman's Auxiliary, Schuylkill County Medical Society	130.00
Woman's Auxiliary, Blair County Medical Society	75.00
Woman's Auxiliary, Clinton County Medical Society	50.00
Woman's Auxiliary, Franklin County Medical Society	75.00
Woman's Auxiliary, Tioga County Medical Society	25.00
Woman's Auxiliary, Potter County Medical Society	10.00
Woman's Auxiliary, Northumberland County Medical Society	10.00
Woman's Auxiliary, Jefferson County Medical Society	5.00
Woman's Auxiliary, Clearfield County Medical Society	50.00
Woman's Auxiliary, Centre County Medical Society	50.00
Woman's Auxiliary, Crawford County Medical Society	10.00
Woman's Auxiliary, Montour-Columbia County Medical Societies	25.00
Woman's Auxiliary, Medical Society of the State of Pennsylvania	400.00
Total contributions since 1940 report...	$6241.80

LIBRARY NEWS

Members desiring to borrow reprints from the library should send 25 cents in stamps to cover the postage and part of the expense of collecting the material. Address the Librarian, 230 State St., Harrisburg, Pa. Each package may be kept for a period of 14 days.

The library will be glad to send packages to our physicians who have been called to military service. Simply write, giving your new address.

Between July 1 and Aug. 1 the following borrowers made use of the library:

Reuben Friedman, Philadelphia—*Impetigo Contagiosa* (9 articles).

S. Meigs Beyer, Punxsutawney—*Obstruction of the Intestines* (18 articles).

Ward O. Wilson, Clearfield—*Premature Separation of the Placenta* (14 articles).

Harry B. Thomas, York—*Tularemia* (24 articles).

Stanley R. Bank, Harrisburg—*High Blood Pressure* (37 articles).

Lawrence W. Dana, Kane—*Pneumothorax* (28 articles).

Herman Hirsh, Harrisburg — *Hypothyroidism* (17 articles.

Lawrence W. Dana, Kane—*Artificial Pneumothorax in Pulmonary Tuberculosis* (46 articles).

Thomas R. Hepler, Harrisburg—*Hemorrhagica Purpura* (24 articles).

Philip F. Williams, Philadelphia—*Surgery in Gynecology* (36 articles).

Dale C. Stahle, Harrisburg—*Pneumonia* (8 articles).

William C. Sandy, Harrisburg—1 journal.

John E. Murphy, Scranton—*Therapy of Undulant Fever* (12 articles).

Charles M. Kutz, Brookville—*Therapy of Fractures* (17 articles).

J. Reginald Myers, Everett—*Anesthesia in Gynecology and Obstetrics* (25 articles).

E. E. Mandel, New York City—*Geriatrics* (1 article).

Herman A. Gilda, Chambersburg—*Injuries from Electricity* (7 articles).

Augustus S. Kech, Altoona—*Circulatory Diseases in Industry* (12 articles).

Spurgeon S. De Vaux, United—*Barbital Anesthesia* (17 articles).

Harvey H. Seiple, Lancaster — *Deficiency Diseases* (19 articles).

Harvey A. Stine, Harrisburg—*Immunity in Tuberculosis* (5 articles).

Wilbur E. Flannery, New Castle—*Feeblemindedness* (19 articles).

Harvey A. Stine, Harrisburg—*Allergy in Tuberculosis* (10 articles).

SCHEDULE FOR THE INSTRUCTIONAL PERIODS AND QUESTION AND ANSWER PERIODS

Committee on Nutrition of The Medical Society of the State of Pennsylvania

In Scientific Exhibit located in Chatterbox, Hotel William Penn, Pittsburgh

Tuesday, Oct. 7, 1941

Time	*Name*	*Title*
10 a. m.	Leonard G. Redding, Scranton	Nutrition in Eye Dysfunctions.
10:30 a. m.	Horace B. Anderson, Johnstown, member of Committee on Nutrition.	A Discussion of the National Nutritional Conference for Defense, Particularly as it Relates to the Physician.
11 a. m.	Mrs. Anna dePlanter Bowes, Harrisburg, Chief, Division of Nutrition, Commonwealth of Pennsylvania, Department of Health (by invitation).	The Interpretation of the "Yardstick of Nutrition."
11:30 a. m.	William J. Armstrong, Butler	Conditioning Factors of the Gastro-intestinal Tract in Nutritional Deficiency Disease.
2 p. m.	Russel F. Miller, Philadelphia	Roentgen Studies in Conjunction with Nutritional Deficiency of Gastro-intestinal Tract.
2:30 p. m.	Harvey H. Seiple, Lancaster, member of Committee on Nutrition.	Nutritional Deficiency Incident to Increased Utilization. Example, Hyperthyroidism, Infection, Etc.
3 p. m.	Herbert T. Kelly, Philadelphia, chairman, Committee on Nutrition.	Medical Aspects of Nutrition.

Wednesday, Oct. 8, 1941

9:30 a. m.	John M. Higgins, Sayre, member of Committee on Nutrition.	The Importance of Recognizing Nutritional Deficiency in Children.
10 a. m.	Mrs. Pauline Berry Mack, State College, Director, Ellen H. Richards Institute of Pennsylvania State College (by invitation).	Application of Research Methods for Determining the Nutritional Status.
10:30 a. m.	Joseph H. Barach, Pittsburgh, member of Committee on Nutrition.	The Significance of Protective Foods in the Management of the Various Types of Obesity.
11 a. m.	Clifford B. Lull, Philadelphia	The Relation of Nutrition to Pregnancy.
2 p. m.	Isidor S. Ravdin, Philadelphia, member of Committee on Nutrition.	Vitamins and Protein in Preoperative and Postoperative Care of the Patient.
2:30 p. m.	Matthew T. Moore, Philadelphia	An Evaluation of Vitamin Therapy in Neurologic and Psychiatric Conditions.
3 p. m.	Belford C. Blaine, Pottsville, member of Committee on Nutrition.	Optimal Nutrition in Diets.

Thursday, Oct. 9, 1941

9:30 a. m.	William M. Donovan, Scranton, member of Committee on Nutrition.	Nutrition in the Aged.
10 a. m.	John H. Gunter, Philadelphia	The Significance of the Oral Mucosa and Teeth in Deficiency Disease.
11 a. m.	Harold L. Tonkin, Williamsport, member of Committee on Nutrition.	The Cost of Vitamins.

Deaths from Selected Causes in Pennsylvania, May, 1941

County	All Causes, Excluding Stillbirths	Still-births	Infant Deaths	Maternal Deaths	Cancer	Intra-cranial Lesions of Vascular Origin	Heart Disease	Nephritis	Pneu-monia	Tuber-culosis
Adams	27	2	0	0	4	3	8	3	0	0
Allegheny *	1213	56	94	4	140	103	325	94	57	41
Armstrong	48	2	3	1	4	8	16	3	0	1
Beaver	117	6	14	0	12	7	40	10	5	2
Bedford	22	2	0	0	5	0	8	1	1	1
Berks *	229	8	17	2	27	25	73	19	7	10
Blair	141	10	9	1	11	12	45	14	3	2
Bradford	53	5	1	0	7	6	12	7	0	0
Bucks	83	0	2	0	14	8	27	10	0	3
Butler	69	3	5	0	7	8	27	8	2	1
Cambria *	160	7	13	1	16	15	50	14	4	4
Cameron	3	0	0	0	1	0	2	0	0	0
Carbon	39	0	1	0	9	2	14	2	0	1
Centre *	54	7	4	1	2	4	22	4	0	1
Chester *	141	1	12	0	14	11	48	17	5	4
Clarion	30	0	1	0	5	3	7	3	0	0
Clearfield	77	5	6	0	8	10	26	10	3	0
Clinton	20	1	3	0	2	2	7	2	0	0
Columbia	48	5	4	1	7	6	13	5	2	1
Crawford	80	4	4	0	8	6	33	4	2	2
Cumberland	60	2	7	0	10	3	12	13	1	2
Dauphin *	182	8	15	0	27	13	65	14	4	6
Delaware	255	10	10	0	27	26	85	27	5	4
Elk	27	1	3	1	5	2	4	3	0	1
Erie	169	8	14	0	24	14	48	11	4	2
Fayette	153	12	15	2	15	10	45	11	6	3
Forest	4	0	0	0	2	0	1	0	0	0
Franklin *	58	2	6	0	3	5	15	10	0	3
Fulton	8	1	1	0	0	2	5	0	1	0
Greene	42	4	3	0	4	3	10	4	2	2
Huntingdon	42	4	5	0	2	2	12	3	0	2
Indiana	56	4	5	0	6	5	12	7	2	0
Jefferson	54	2	6	0	7	5	11	7	1	1
Juniata	11	0	1	0	0	3	2	1	0	1
Lackawanna	270	10	22	0	34	19	90	24	11	14
Lancaster	198	7	19	0	20	21	63	15	9	4
Lawrence	82	7	9	0	4	7	31	4	0	0
Lebanon	66	3	5	0	8	3	19	5	1	0
Lehigh *	209	6	29	2	26	20	52	12	12	9
Luzerne	358	15	30	1	37	19	119	27	8	18
Lycoming	104	2	5	0	15	15	27	7	2	0
McKean	50	4	4	0	7	4	16	2	1	1
Mercer	96	3	6	1	10	8	31	4	4	0
Mifflin	32	7	4	0	5	2	9	3	0	1
Monroe	22	0	0	0	0	0	5	1	0	3
Montgomery *	225	7	8	1	27	16	85	23	3	4
Montour *	26	0	1	0	0	1	7	3	2	0
Northampton	146	0	9	0	18	15	46	7	3	6
Northumberland	95	6	9	1	10	7	34	8	5	4
Perry	26	0	2	0	2	6	9	2	0	0
Philadelphia *	1701	41	70	2	271	111	567	126	37	96
Pike	6	0	0	0	0	0	1	0	0	1
Potter	13	1	3	0	2	0	4	1	0	0
Schuylkill	212	9	15	3	15	15	68	25	10	9
Snyder *	15	0	1	0	2	1	6	2	0	0
Somerset	55	5	3	0	9	7	15	3	0	0
Sullivan	6	0	0	0	1	1	3	1	0	0
Susquehanna	29	2	0	0	9	3	7	3	1	1
Tioga	36	2	4	0	6	3	15	4	1	0
Union *	21	0	3	0	5	1	6	1	0	1
Venango *	64	2	5	1	5	3	18	6	3	0
Warren *	39	1	6	0	3	1	14	2	2	0
Washington	140	15	13	0	9	23	43	11	2	3
Wayne *	27	3	2	0	0	4	10	4	0	0
Westmoreland *	227	16	19	0	20	20	70	20	7	4
Wyoming	16	1	0	0	2	1	7	0	0	1
York	156	6	6	0	24	22	54	9	1	1
State and federal institutions	195	0	0	0	10	5	35	9	13	65
State total	8738	363	596	26	1051	716	2716	715	255	347

* Exclusive of deaths occurring in state and federal institutions except general hospitals.

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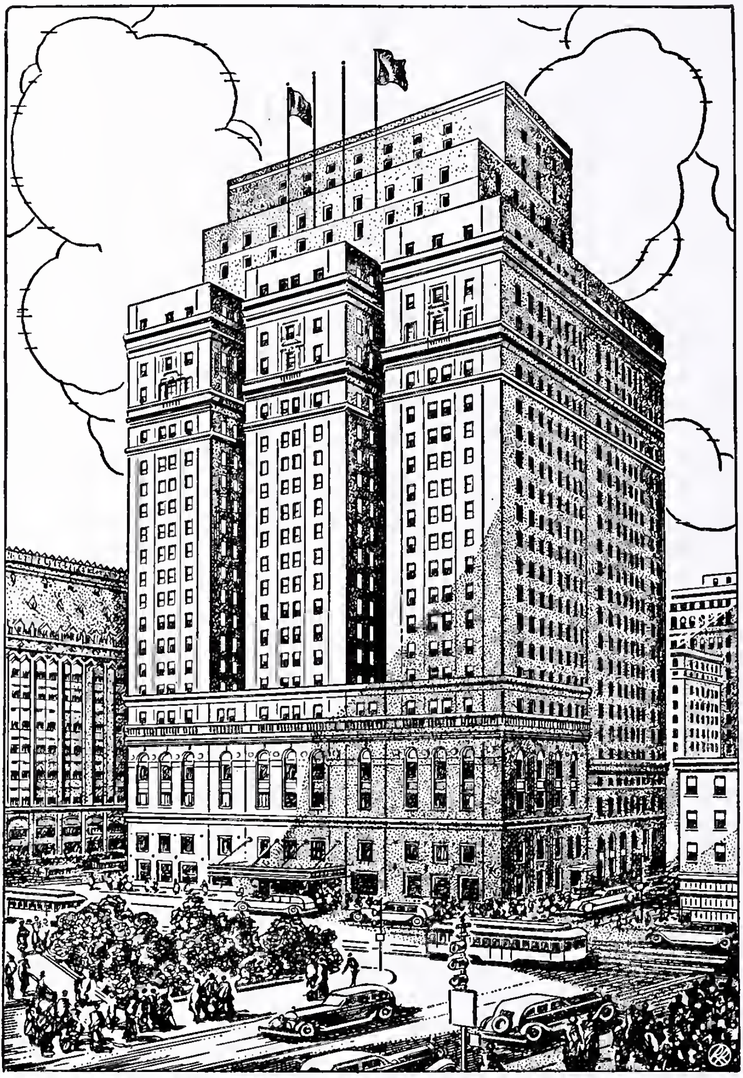

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TUBERCULOSIS ABSTRACTS

A Review for Physicians

PREPARED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

Published through the co-operation of the Pennsylvania Tuberculosis Society and The Medical Society of the State of Pennsylvania

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TEN years ago no more than a dozen school health administrators were actively seeking out tuberculosis among the students in colleges and universities, despite the acknowledged predilection of the tubercle bacillus for those of this age group. Today 248 institutions of higher learning have some form of program for the finding of tuberculosis on the campus. The tenth annual report of the Tuberculosis Committee of the American Student Health Association is both a record of progress and a reminder of what is still to be done.

FINDING TUBERCULOSIS AMONG COLLEGE STUDENTS

The colleges and universities of the United States and Canada are becoming increasingly "unfair to tuberculosis!" They are showing that they recognize an obligation to safeguard and improve campus health and the present report of the Tuberculosis Committee relates action such as no previous report has recorded.

For the academic year of 1939-40, 248 colleges had some form of tuberculosis control, an increase of about 50 per cent over the preceding school year. Necessarily, where a movement is gaining new adherents annually, the character of individual programs varies greatly. There are still 629 colleges with no program, but about 30 of these hope to initiate one this year. Although 402 schools neglected to return the questionnaire sent by the committee, there were 193 additional replies this year. In spite of this, 6 states have failed to report a single collegiate tuberculosis program.

The duties of the committee fall into 3 divisions: first, the presentation to interested schools of the most approved outline of workable institutional tuberculosis case finding; second, the active encouragement of interest in case finding; and third, the collection, analysis, and publication of statistical data secured from colleges taking part in the national survey.

Since the statistical data collected by the committee are submitted by many people and accumulated under widely differing conditions, some are open to criticism, so the report figures are indicative of trends rather than mathematical pronouncements.

The procedure is to mail questionnaires early in May to co-operating schools and a follow-up is sent in October when necessary. Nothing is asked which would require the keeping of complex records. The form requests the name and enrollment of the college, the number of positive reactors to tuberculin, the tuberculosis cases discovered and their disposition, and the number of students tuberculin-tested and x-rayed elsewhere than on the campus. Similar data are requested on nonstudent tuberculosis. Returns are divided by sex. The reverse side contains questions as to procedure which, in general, can be answered by a check mark. The recommended technics are plainly underlined. A duplicate copy of the questionnaire is sent for the use of the health officer of the institution.

This year questionnaires were sent to 20 colleges and universities in Canada. There is no Canadian student health association and so frequent have been the requests for information that it was decided to circularize these colleges. Several fine programs are already under way in Canada.

More colleges have discovered this year that a relatively simple system suffices to keep track of tuberculin testing, negative and positive reactors, x-ray results, etc. It is essential that those conducting health work know, at any time, the exact status of their effort and the result.

The committee agreed that tuberculin testing is a prime prerequisite to a tuberculosis case-finding plan and believes that only thus can *all* infected students be identified. The committee recommends the annual re-testing of all negative reactors since the initial infection occurring in a young adult may produce an unpredictable clinical sequence of events. Where hazards of infection are heightened, as in nursing, medicine, dentistry, practice teaching, etc., more frequent testing is indicated.

The committee recommends that only reliable tuberculin be used and that a positive reaction to the tuberculin test be succeeded by a good chest film. Where possible, the fluoroscope should be used as a supplement to the film.

In Table I data from 166 colleges are compiled because their figures seemed satisfactory in quality. The continued shrinkage in positive reactors seems to indicate a national decline in childhood infection.

TABLE I

TUBERCULIN TESTING OF AMERICAN COLLEGE STUDENTS

Year	*Total No. Tested*	*Per Cent Positive*
1932-33	14,318	35.0
1933-34	25,184	30.3
1934-35	26,861	29.4
1935-36	31,601	30.0
1936-37	56,224	27.3
1937-38	64,232	25.8
1938-39	82,774	25.5
1939-40*	123,389	25.4

---

* Reliable returns only.

The results of the survey in cases found are condensed into Table II.

TABLE II

CASES OF PULMONARY TUBERCULOSIS DIAGNOSED AMONG COLLEGE STUDENTS 1939-40

A. In institutions with *some* tuberculosis control program.

B. In institutions with *no* tuberculosis control program.

	A.	*B.*
Clinically active cases diagnosed*....	292	21
Apparently arrested cases diagnosed*	345	14
Withdrawals due to tuberculosis.....	273	25
Old cases back in school	338	23
Institutions reporting	248	227
Approximate total enrollment	490,000	200,000

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* Generally recognized criteria of activity were specified.

Using only the active cases for comparison, it is seen that such cases were turned up with much greater frequency in Group A. It is fair to presume that these cases were found early, often pre-clinically, instead of late and with marked signs and symptoms, which proves again the importance of early diagnosis.

Educators are sensing the urgency that animates an enlightened citizenry intent on eliminating every preventable disease. The ultimate aim of the committee is to report that, in answer to their questionnaire, every American college has replied: "We *have* a modern tuberculosis control program, and tuberculosis will not catch this college or any of our students napping."

Tenth Annual Report of the Tuberculosis Committee, American Student Health Association, 1939-40, by Charles E. Lyght, M.D., Chairman, Journal-Lancet, April, 1941.

Do you enjoy frankness in scientific discussion, whether it be about something new or something old? Test your personal reaction by turning to page 1547 (the peritoneoscope)—something new; and page 1601 (the demand for instruction in child-spacing technic)—something old.

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THE WOMAN'S AUXILIARY

MRS. GEORGE C. YEAGER, *Editor*
1419 E. Susquehanna Avenue
Philadelphia, Pa.

PRESIDENT'S LETTER

Dear Auxiliary Friends:

The time is rapidly approaching when we will be together again at our annual convention. It should be a pleasant anticipation for all of us. In these days of world turmoil and strife, it will be a respite from the unpleasant thoughts of war. We need, also, a change from our regular duties and responsibilities. The convention is the place! Here we meet old friends and renew acquaintances. We meet on a common ground because our everyday lives have such similar experiences. Our understanding of professional duties is very complete. The convention should bring us all inspiration and comradeship.

To this end, the committee is making every effort to bring you unusual entertainment. Your time will be socially pleasant as well as rich in information. On Tuesday morning you will note in the tentative program that Dr. Daniel L. Borden, of Washington, D. C., will address the convention. I have heard this talk. It is most interesting and it will explain many puzzling questions concerning the trial which indicted the A. M. A. Dr. Borden will clarify his address with lantern slides, and if your husbands are interested, we would gladly have them come into the meeting, around 11 o'clock. Don't fail yourself to hear this address! You will always be glad you heard it from one who was at every session throughout the trial.

I am eagerly looking forward to seeing you again. Every convention now will mean to me that I can visit again with you who were so kind and gracious to me during my visits to your respective auxiliaries. It has been a rare privilege and I shall always be grateful for it.

With hopeful anticipation of seeing you in October, and with many thanks for all your gracious hospitality, I am,

Cordially yours,

Mary E. (Mrs. Maxwell) Lick,
President.

TENTATIVE CONVENTION PROGRAM

THE WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Seventeenth Annual Session, Pittsburgh

October 6 to 9, 1941

Headquarters: Hotel William Penn

Convention Chairman: Mrs. Homer W. Grimm.

Co-Chairmen: Mrs. Henry D. Jorden, Mrs. Jay G. Linn.

Treasurer: Mrs. Frank E. Gray, 140 Crescent Hill Rd., R. D. 1, Wilkinsburg.

Monday, October 6

12:30 p.m. Reception, Urban Room.

1:00 p.m. Luncheon in honor of Mrs. Roscoe E. Mosiman, president of the Woman's Auxiliary to the American Medical Association, and Mrs. Maxwell Lick, president of the Woman's Auxiliary to The Medical Society of the State of Pennsylvania.

Chairman, Mrs. Nelson P. Davis; co-chairman, Mrs. Wesley L. Allison. Mrs. John H. Doane, presiding.

Guests: Mrs. Charles C. Crouse, Mrs. Walter F. Donaldson, Mrs. Francis F. Borzell, Mrs. Lewis T. Buckman, Mrs. J. Newton Hunsberger, Mrs. Augustus S. Kech, Mrs. Homer W. Grimm, Mrs. John P. Griffith, Mrs. Ralph D. Bacon, and Mrs. John H. Gemmell.

Directors and vice-presidents: Mrs. Leon C. Darrah, Mrs. M. Fraser Percival, Mrs. James G. Gemmill, Mrs. Newton H. Stein, Mrs. Robert S. Woehrle, Mrs. Frank C. Parker, and Mrs. Charles G. Eicher.

Invocation, Mrs. James H. Corwin.

Program:
- Current medical news, Mrs. Ralph D. Bacon.
- Music, Mrs. Elsie Breese Mitchell.
- Address, Mrs. Roscoe E. Mosiman.

(Make reservations for luncheon, before arrival, if possible.)

Subscription.

2:30 p.m. General conference, Club Floor Parlor. (All chairmen requested to be present.)

Program, Mrs. Howard A. Power.
Hygeia, Mrs. Wellington D. Griesemer.
Public Relations, Mrs. James D. Stark.
Legislative, Mrs. Charles G. Eicher.
Councilors, Mrs. Charles C. Crouse.

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GYNECOLOGY—Two Weeks Intensive Course starting October 20th. Twenty Hour Personal Course in Vaginal Approach to Pelvic Surgery starting November 3rd. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course starting October 6th. Informal Course every week.

OTOLARYNGOLOGY—Clinical and Special Courses starting every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting September 22nd. Five Weeks Course in Refraction Methods starting October 13th. Informal Course every week.

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6:30 p. m. Executive Board dinner. Chairman, Mrs. Charles G. Eicher; co-chairman, Mrs. Hubert J. Goodrich.
Subscription.

8:00 p. m. Executive Board meeting. Mrs. Maxwell Lick, presiding. (County presidents and presidents-elect, also past presidents of Pennsylvania State Auxiliary are invited to attend dinner and meeting.)
Official business.
(If possible, send reservations in advance for Monday luncheon and Executive Board dinner to registration chairman, Mrs. Joseph S. Baird, Municipal Hospital, Pittsburgh.)

Tuesday, October 7

Formal Opening of Convention

9:00 a. m. General Meeting, Club Floor Parlor.
- Singing, "God Bless America."
- Invocation, Dr. Joseph F. Morledge, Pastor, Sixth Presbyterian Church, Pittsburgh.
- "In Memoriam," Mrs. Francis F. Borzell.
- Pianist, Mrs. G. J. McKee.
- Address of welcome, Dr. John P. Griffith, president, Allegheny County Medical Society.
- Greetings, Mrs. Homer W. Grimm.
- Response.
- Report of registration, Mrs. Walter E. Starz.
- Minutes of Sixteenth Annual Convention, Mrs. Francis P. Dwyer.
- Report of 1941 National Convention, Mrs. Francis F. Borzell.
- Announcement of Nominating Committee, Mrs. Laurrie D. Sargent.
- Roll call of counties.
- Reports of officers:
  - President, Mrs. Maxwell Lick.
  - Corresponding secretary, Mrs. Frederick W. Underhill.
  - Recording secretary, Mrs. Francis P. Dwyer.
  - Treasurer, Mrs. John R. Davies.
  - Auditor's report, read by recording secretary.
- Announcements of convention, Mrs. Homer W. Grimm.
- Address: "The American Medical Association on Trial," Dr. Daniel L. Borden, Washington, D. C.

12:15 p. m. Auxiliary Luncheon, Terrace Room, Lobby. Chairman, Mrs. Linfred L. Cooper; co-chairman, Mrs. John R. Conover. Mrs. James H. Delaney, presiding.
Speakers: Drs. Francis F. Borzell, Lewis T. Buckman, Walter F. Donaldson, and W. Burrill Odenatt.
Guests: Drs. W. Burrill Odenatt, Maxwell Lick, Francis P. Dwyer, Laurence C. Milstead, John F. McCullough, Robert L. Anderson, Homer W. Grimm, Charles C. Crouse, John P. Griffith, James H. Delaney, Miss Ida L. Little, and Mr. Lester H. Perry.
Address.
Subscription.

2:30 p. m. General Meeting, Club Floor Parlor.
Minutes, Mrs. Francis P. Dwyer.
Unfinished business.
New business.
Election of delegates to 1942 National Convention.

Committee Reports:
Finance, Mrs. John F. McCullough.
National Bulletin, Mrs. William F. Krick.
Councilors, Mrs. Charles C. Crouse.
By-laws, Mrs. Joseph C. Doane.
Nominating, Mrs. Laurrie D. Sargent.
Report of convention chairman, Mrs. Homer W. Grimm.
Resolutions, Mrs. Charles J. Swalm.
Legislative, Mrs. Charles G. Eicher.
Program, Mrs. Howard A. Power.
Public relations, Mrs. James D. Stark.
Clipping service, Mrs. David M. Dunbar.
Exhibit, Mrs. Laurence C. Milstead.
Archives, Mrs. David W. Ludwig.
Hygeia, Mrs. Wellington D. Griesemer.
Necrology, Mrs. Francis F. Borzell.
Publicity, Mrs. George C. Yeager.

Tuesday Evening

8:00 p. m. Program of opening General Meeting of The Medical Society of the State of Pennsylyania at Carnegie Music Hall. (All auxiliary members are urged to attend.)

Wednesday, October 8

9:00 a. m. General Meeting, Terrace Room, Lobby.
Report of Registration Committee, Mrs. Walter E. Starz.
Minutes of previous session, Mrs. Francis P. Dwyer.
Unfinished business.
New business.
Report of finance chairman, Mrs. John F. McCullough.
Report of counties.
Report of Resolutions Committee, Mrs. Charles J. Swalm.
Report of Nominating Committee, Mrs. Laurrie D. Sargent.
Election and installation of officers.
Address, Mrs. Charles C. Crouse.
Announcements.

12:45 p. m. Luncheon, Twentieth Century Club. (Transportation provided for guests.)
Chairman, Mrs. Walter F. Donaldson; co-chairman, Mrs. Howard A. Power.
Entertainment.
Subscription.

6:30 p. m. Reception, Terrace Room, Lobby.

7:00 p. m. Dinner in honor of past presidents.
Chairman, Mrs. Robert C. Hibbs; co-chairman, Mrs. Norman A. Hartman.
Mrs. Charles C. Crouse, presiding.
Program.

9:30 p. m. Reception and dance in honor of the president of The Medical Society of the State of Pennsylvania.

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For Information Address: MEDICAL EXECUTIVE OFFICER, 345 West 50th Street, New York City

Thursday, October 9

10:00 a.m. Postconvention Board Meeting, Club Floor Parlor. (All members of the Executive Board are urged to attend.) Mrs. Charles C. Crouse, presiding.

Announcement of committee appointments.

Presentation of program for 1941-1942.

Plans for work of standing committee chairmen.

Election of delegates to the annual meeting of the Woman's Auxiliary to the American Medical Association to be held in Atlantic City, 1942.

Adjournment.

COUNTY AUXILIARY REPORTS

Bradford.—A joint meeting of the Bradford and Tioga County Medical Societies and the auxiliary was held on June 25 at the Weusawking Lodge, Towanda. Dr. J. K. Williams Wood, Troy, president of the Bradford County Medical Society, presided. Mrs. Robert S. Woehrle, Wilkes-Barre, who was introduced as councilor for the auxiliaries of the Twelfth District, gave an inspiring message to the women and urged them to stand united in their auxiliary work.

Six new members were added to the auxiliary.

Dr. Peter P. Mayock, Wilkes-Barre, gave a short talk, and was followed by Dr. Lewis T. Buckman, president-elect of the State Medical Society.

Following dinner, travel pictures were shown by members of the medical societies.

Crawford.—The auxiliary met at the attractive Hotel Riverside, in Cambridge Springs, on June 18. A delightful program followed the dinner, with Mrs. Glenn Wells, who with her husband has been touring the country on the Collins Festival Bureau, giving a number of poetic readings and character sketches.

The new officers are: President, Mrs. John M. Kinnunen; president-elect, Mrs. Kenneth A. Hines; first vice-president, Mrs. James N. Strausbaugh; second vice-president, Mrs. William H. Brennen; secretary, Mrs. Joseph R. Gingold; treasurer, Mrs. Frederick H. Muckinhaupt; philanthropic chairman, Mrs. John H. Bailey; by-laws chairman, Mrs. Maurice T. Leary; exhibit chairman, Mrs. Luther J. King; hospitality co-chairmen, Mrs. Vincent G. Hawkey and Mrs. John C. Davis; legislative chairman, Mrs. Daniel Maloney; program co-chairmen, Mrs. S. Frank Hazen and Mrs. H. Paul Bauer; public relations chairman, Mrs. Herman H. Walker; historian, Dr. Coletta Deissler; publicity co-chairmen, Mrs. Richard L. Bates and Mrs. George E. Hayward.

Several members from Meadville were in the party on the *S. S. South American* on Lake Erie for an exceptionally fine 10-hour cruise on June 19. The weather was ideal and the entertainment and meals were excellent.

Golf and bowling entertained members of the Medical Helpmeets' Duckpin League, their husbands, and several guests at the cottage of Dr. and Mrs. Frederick H. Muckinhaupt at Conneaut Lake, Wednesday after-

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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noon and evening, June 11. A tureen dinner was served from tables on the lawn.

Franklin.—A regular meeting was held on June 4 at the home of Mrs. Alexander Stewart, Shippensburg. Mrs. Ira M. Henderson the president, was in the chair. The regular business was conducted. It was decided to give $75 to the Medical Benevolence Fund. The following officers were elected: President, Mrs. Ira M. Henderson; vice-president, Mrs. Frank J. Corbett; secretary, Mrs. David C. Pewterbaugh; and treasurer, Mrs. J. Walker Croft.

The speaker of the afternoon was Mrs. William S. Culbertson. Her subject was "Rumania and Chile." She described life as she lived it while her husband served as minister to Rumania and as ambassador to Chile.

The members enjoyed a social hour and a tea at the conclusion of the program. The hostesses were Mrs. Stewart, Mrs. S. Dana Sutliff, Mrs. LeRoy H. Saxe, and Mrs. Albert W. Freeman.

The auxiliary members were entertained at a luncheon and bridge party on May 20 at the home of Mrs. Samuel D. Shull, Chambersburg. A very delightful afternoon was spent. The hostesses assisting Mrs. Shull were Mrs. Theodore Peters, Mrs. Frank J. Corbett, Mrs. Fairfax G. Wright, Miss Sarah Gelwix, and Mrs. Robert G. Greenawalt.

Lackawanna-Luzerne.—The joint meeting of the Third and Twelfth Councilor Districts was held at the Scranton Country Club on June 17. The following counties were represented: Bradford, Carbon, Lackawanna, Luzerne, Monroe, Wayne, and Wyoming. Mrs. Clarence D. Hummel, Easton, councilor for the Third District, presided.

An address of welcome was given by Mrs. Louis A. Milkman, Scranton. A councilor report of both districts was given by Mrs. Robert S. Woehrle, Wilkes-Barre, councilor for the Twelfth District. Dr. Francis F. Borzell, Philadelphia, president of the State Medical Society, gave a message, and an address was made by Mrs. Charles C. Crouse, Greensburg, president-elect of the State Auxiliary.

Luncheon followed.

Lebanon.—A meeting of the auxiliary was held at Mt. Gretna on June 9 at the Mt. Gretna Inn. Luncheon was served at one o'clock to the 27 members present.

Mrs. Herbert C. McClelland, the president, presided at the business meeting. Two motions of importance were made and carried—one to increase the number of hostesses at each luncheon meeting from 2 to 3 because of the increase in membership, and the other to dispense with hostesses at the first and last meetings each year.

Since this was the last meeting for the year 1940-1941, the secretary, Mrs. Roy S. Conrad, gave the following résumé of the year's activities:

On July 23, 1940, a special meeting was called by the president, Mrs. McClelland, to revise the by-laws.

In September the president appointed Mrs. C. Ray Bell to have a map or poster made showing the activities of our auxiliary the past year, the map to be displayed in Philadelphia at the state convention.

In November a committee was appointed to take charge of the refreshments to be served at the Doctor Guilford Memorial Clinic held at the Good Samaritan Hospital on Nov. 26. A motion was made and carried that the *Hygeia* magazine be placed in the Jonestown

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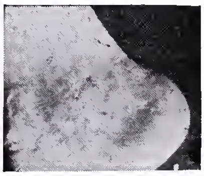

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Home, the public library, and the high school library. Another motion was made to remind our husbands to donate canned milk, drugs, and instruments to the British Aid Society.

At the March, 1941, meeting a dessert-bridge instead of the usual luncheon and business meeting was participated in by the members for the purpose of raising money for the Medical Benevolence Fund. A considerable sum of money for the fund was realized from an auction of novelties and cakes.

In April the Lebanon County Auxiliary received honorable mention in the *Hygeia* magazine for the number of subscriptions secured for the year. On Apr. 24 a public health lecture was held in the high school auditorium. The subject was "Tuberculosis." A motion was made and carried to donate $100 to the Medical Benevolence Fund. A paper on "The Duties of the Woman's Auxiliary to the American Medical Association" was read by Mrs. Bell.

At the May meeting the auxiliary was honored by the presence of our state president, Mrs. Maxwell Lick.

Twelve of our members attended the tea given by the York County Auxiliary on May 13.

Mrs. Bell was asked to contact the doctors' wives of the post officers at the Indiantown Gap Reservation to invite them to attend our auxiliary meetings.

Five new members were added to the roster during the year, bringing the membership to 38.

The meeting adjourned and a social hour was enjoyed by the members.

Lehigh.—On June 28 the auxiliary held a lawn card party at the home of Dr. and Mrs. Constantine J. Adamiak, Catasauqua, the proceeds for the benefit of its charity fund. Mrs. Carl J. Newhart, president-elect of the auxiliary, was in charge of the affair. Assisting her were Mrs. Charles F. Johnson, of Emmaus, ways and means chairman, and Mrs. Charles R. Fox, of Northampton, hospitality chairman.

On July 15 Mrs. Elmer A. Bausch, retiring president, was guest of honor at the testimonial luncheon of the auxiliary at Trainer's Restaurant in Quakertown. Fifty members of the organization feted Mrs. Bausch, who served as president for a year and a half because the by-laws of the auxiliary were amended to conform with those of the State Auxiliary. Mrs. Harry J. S. Keim, of Catasauqua, a past president, was the toastmistress and spoke on "Famous Women of the Past." Mrs. Carl J. Newhart, of Hokendauqua, new president of the auxiliary, sang "In the Garden of Tomorrow," with Mrs. Luther H. Kline at the piano. Mrs. J. Treichler Butz, also a past president, and now

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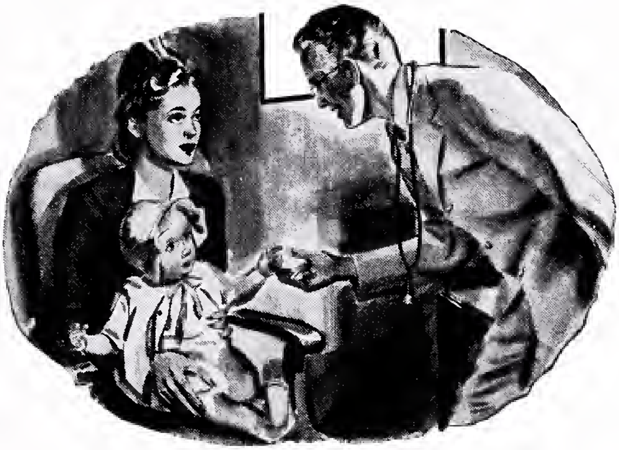

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(1)
1940. Am. J. Pub. Health 30, 169.
1939. Food and Life, Yearbook of Agriculture, U. S. Dept. Agr., U. S. Government Printing Office, Washington, D. C., page 276.
1939. Accepted Foods and their Nutritional Significance, Council on Foods of the American Medical Association, Chicago, page 236.
1934. Am. J. Pub. Health 24, 194.

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a district councilor, spoke of the work of the auxiliary, which is the oldest in Pennsylvania.

A brief business session, the final in her régime, was conducted by Mrs. Bausch. The auxiliary voted to give $25 to the U. S. O.

Other past presidents who spoke were Mrs. Harry E. Klingaman, Mrs. Charles R. Fox, and Mrs. Aaron D. Weaver. Mrs. Bausch, who was presented with a console set, responded to the testimonials.

Mrs. Charles R. Fox, hospitality chairman, and Mrs. Charles F. Johnson, ways and means chairman, were in charge of arrangements for the affair.

DEATHS FROM DISEASE SHOULD BE FEWER IN '41 ARMY THAN IN '18

Unless some new cause of death occurs to weight the index unfavorably, the new army should have a far lower death rate record from disease than did the army of 20 years ago, O. H. Perry Pepper, M.D., Philadelphia, chairman of the Committee on Medicine of the National Research Council, declares in the July-August issue of *War Medicine,* published bimonthly by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council.

"To obtain these improved results," he says, "a proper appreciation of the rôle of general medicine in the army is essential. Officer personnel skilled in general medicine and diagnostic and therapeutic facilities equal to the best in civil practice are required to guarantee the results which can and should be obtained."

Dr. Pepper's prediction is predicated on a study of the statistics of diseases in the American army during the last world war and an analysis of present-day knowledge of how to prevent, diagnose, and treat these diseases more effectively. Of particular significance is his warning that the danger "is that the expectancy of general medical disease in the army and the heavy obligation of the medical officers in this field will be lost sight of as a result of the tremendous emphasis placed on certain limited parts of the problem. Surgery, for example, becomes of predominant importance only when battle casualties occur."

Dr. Pepper says that the mean annual strength of officers and enlisted personnel in the United States and Alaska during the period from Apr. 1, 1917, to Dec. 31, 1919, was 2,235,389 men, which is a number reasonably comparable to the total strength now being approached by the army. The statistics do not include any data on

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the American Expeditionary Force nor on troops in tropical areas, such as in the new Caribbean bases.

"One is therefore dealing with two equally large groups of selected, supposedly healthy young men mobilized within the United States," he says. "The earlier experience should be instructive.

"In the 33 months from Apr. 1, 1917, to Dec. 31, 1919, there occurred in the army admissions to the hospital for some 30 varieties of infectious disease exclusive of tuberculosis and venereal diseases. There were also admissions for some 25 other 'general diseases'; for more than 25 varieties of circulatory disease; for 10 disorders of the respiratory system; and for 25 disturbances of the digestive system. Furthermore, there were some 20 disorders of the nervous system. . . ."

Discussing some of the more important, or frequently occurring, medical diseases of the army 24 years ago and the factors, if any, which may change the incidence or severity of these diseases in the months to come, Dr. Pepper says that among the infectious diseases "it is permissible to anticipate an improvement in the figures for typhoid fever . . . although it is too much to hope that typhoid fever will not occur. Ideally this goal might be achieved were there no slip-up in prophylactic vaccination and no failure in resulting immunity. Much the same reasoning applies to smallpox . . . although there is less excuse for even a single ease. . . . Tetanus can also be eliminated from the new army. . . .

"Little can be done to prevent measles and mumps. Already these are running high in the hospital admissions of the new army. Similarly, influenza may reappear, but, it may be hoped, not to the same extent and not with the same serious complications. Meningococcic meningitis may perhaps be kept to a lower level by more prompt diagnosis and more successful treatment of patients and carriers with sulfanilamide and its derivatives; certainly death from the disease should be less frequent. . . ."

Beriberi and pellagra, included in the list of infections 20 years ago, will not reappear there today. They are vitamin deficiency diseases and, Dr. Pepper explains, "they will be found under another heading, if at all, for science does advance! Tuberculosis of the lungs, it is to be hoped, will be greatly reduced as a result of more careful pre-service examinations with roentgen control. One wishes that one could be equally hopeful about 'acute articular rheumatism,' but unfortunately there is little basis for such optimism. Two small epidemics have already occurred."

Under general diseases he says that the incidence of rickets should be reduced and that cancer and other malignant tumors will require prompt and thorough treatment if anything is to be accomplished. He says there is no assurance that the incidence of arthritis will be reduced. It is surely justifiable to believe, he says, that few, if any, of the disorders due to lack of sufficient vitamins will occur in the new, well-fed army.

Dr. Pepper says there is reason to hope for material improvement in the incidence of diseases of the circulatory system, but it is feared that the present army will show a far higher incidence of high blood pressure than was found in the last World War.

Although sulfanilamide and its derivatives will favorably influence the death rate from pneumonia, there may be no improvement in the incidence of this condition unless it is found that the preventive use of these drugs for influenza and measles is justified, he says in analyzing the diseases of the respiratory system. The incidence of asthma may be expected to be the same. . . .

Discussing diseases of the digestive system, Dr. Pepper says there is little reason to believe that there will be any lessening in the frequency of peptic ulcer; in fact, there is likely to be an increase if rumors concerning the frequency of this disorder in the armed forces of other nations can be believed. Appendicitis may be less frequent and also hernia. A lower incidence of intestinal infestations may be expected.

"In the group of 2,235,389 enlisted men and officers in the army in the United States (including Alaska) during the 33 months from Apr. 1, 1917, to Dec. 31, 1919, there occurred from disease (exclusive of injuries, etc.) 34,858 deaths, or 15.59 deaths per thousand," Dr. Pepper states.

The chief causes of these deaths rank as follows: influenza, lobar pneumonia, bronchopneumonia, measles, tuberculosis, and meningococcic meningitis. These 6 diseases caused about 88 per cent of the deaths. Their toll in the new army should be materially reduced.

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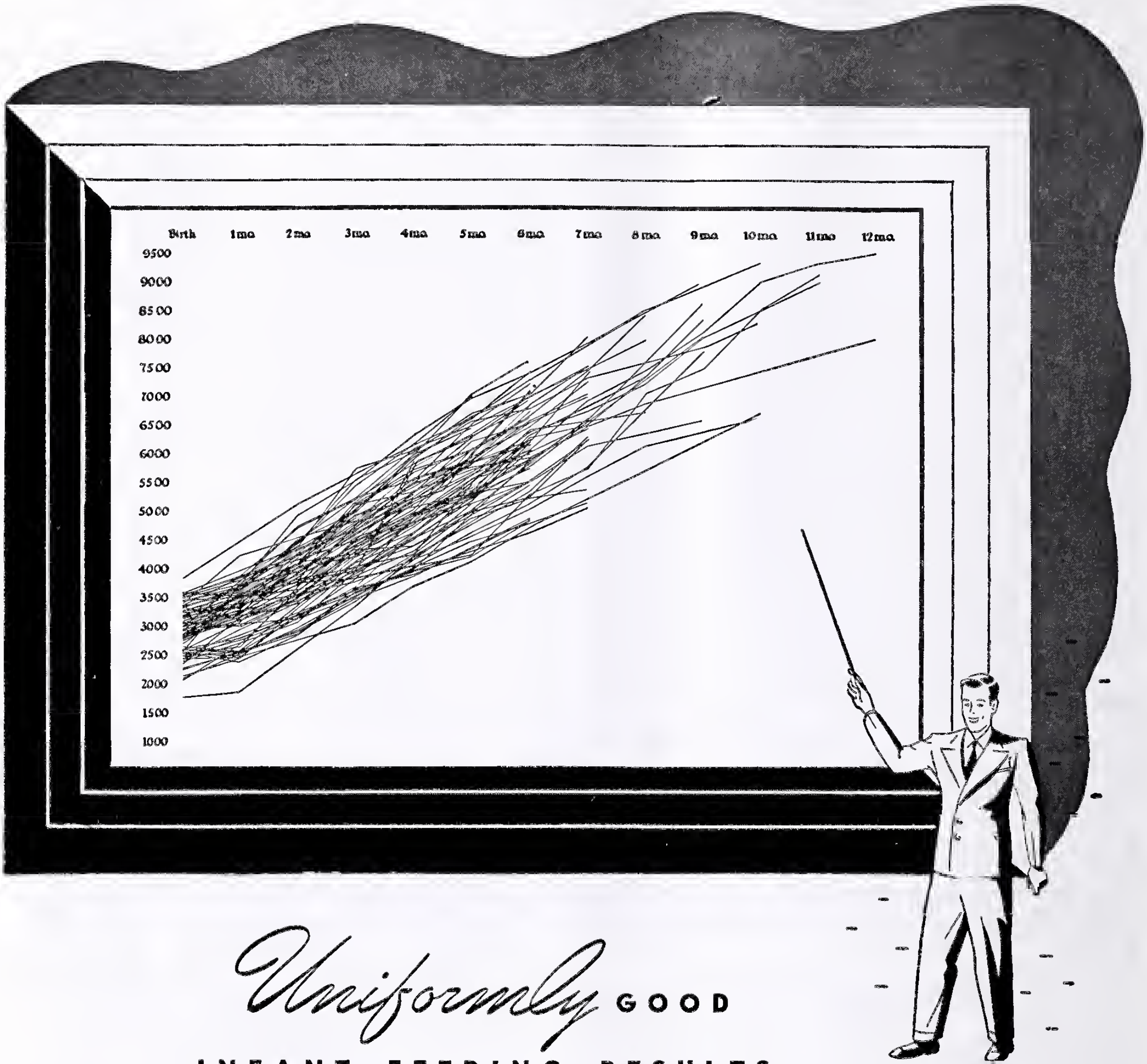

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MEDICAL NEWS

Births

To Dr. and Mrs. F. Benedict Lanahan, of Wynnewood, a daughter, Aug. 6.

To Dr. and Mrs. Walter Klein, of Pittsburgh, a son, Walter Ritchie, Aug. 3.

To Dr. and Mrs. Donald D. Williams, of Erie, a daughter, Kathleen Ann, June 20.

Engagements

Miss Margaret McCook McCague, daughter of Dr. and Mrs. Edward J. McCague, of Pittsburgh, and Mr. Lewis Levick Neilson, of Ardmore.

Miss Barbara Corinne Shepler, daughter of Dr. and Mrs. Norman B. Shepler, of Harrisburg, and Mr. Charles Colfelt Dallas, of Bedford.

Miss Elizabeth Montgomery Ervin, daughter of Dr. and Mrs. John Herbert Ervin, of Jenkintown, and Mr. Lewis Davis Jones, of Lansdale.

Miss Elizabeth Scott Graham and Rufus E. Palmer, 3d, M.D., both of Philadelphia. Dr. Palmer is a lieutenant in the Medical Corps, U. S. N. R.

Miss Virginia Sharp, of Bryn Mawr, and Lieut. H. Hunter Lott, Jr., son of Dr. H. Hunter Lott, of Cynwyd. Lieutenant Lott is stationed at Fort George Meade, Md.

Miss Edna Ardis Seal, of Media, and Mr. John Dwight Allen, son of Dr. J. Hall Allen, of Philadelphia. Mr. Allen is now studying medicine at Jefferson Medical College.

Miss Helen L. Eberle, of Canonsburg, and S. Newton Kelso, Jr., M.D., of Lewistown. Dr. Kelso is an intern at the Harrisburg Hospital and Miss Eberle is a nurse at the Elizabeth Steele Magee Hospital, Pittsburgh.

Marriages

Miss Nina Milner Bowers to Clayton Tremain Beecham, M.D., both of Philadelphia, Aug. 23.

Miss Helen Louise Myers, R.N., of York, to Raymond J. Shettel, M.D., of Mount Wolf, July 18.

Miss Martbeth Gotwals, of Norristown, to Dr. Kenneth duBois Ervin, son of Dr. and Mrs. John Herbert Ervin, of Jenkintown, July 12.

Miss Bruner Richards Hunneman, of Malvern, to Lieut. Edgar R. Owen, Air Corps, United States Army, son of Dr. and Mrs. Hubley R. Owen, of Philadelphia, Aug. 6.

Miss Mary Virginia Gelwix, daughter of Dr. and Mrs. John Montgomery Gelwix, of Chambersburg, to Lieut. Richard Breneman Bare, of Lancaster, Aug. 2. Lieutenant Bare is connected with the 103d Medical Regiment, stationed at Indiantown Gap.

Deaths

○ *Indicates membership in county medical society, The Medical Society of the State of Pennsylvania, and the American Medical Association.*

○ **Henry L. Stem,** Union City; Cleveland Medical College, 1892; aged 72; died on July 17.

○ **George A. Noon,** Listie; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1900; aged 82; died on Oct. 12, 1940.

○ **William Joseph Lynch,** Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1909; aged 53; died recently.

○ **John V. Cowden,** Butler; University of Pittsburgh School of Medicine, 1896; aged 71; died on Aug. 19 while on a vacation in Canada.

○ **George A. Zimmerman,** Harrisburg; Baltimore Medical College, 1910; aged 61; died on Aug. 15. He is survived by his wife, 3 sisters, and 2 brothers.

○ **William B. Hamaker,** Lancaster; Baltimore Medical College, 1905; aged 63; died on July 15. Dr. Hamaker was a Fellow of the American Medical Association.

Mary P. H. Hough, Ambler; Woman's Medical College of Pennsylvania, 1881; aged 83; died on July 25. Dr. Hough retired from practice 7 years ago. She is survived by 2 sons and a daughter.

○ **Wallace Steel Bryan,** Ramey; Jefferson Medical College of Philadelphia, 1906; aged 65; died on July 20. Dr. Bryan was a Fellow of the American Medical Association. He is survived by 2 daughters.

George D. Mulligan, Norristown; Temple University School of Medicine, 1927; aged 43; died on July 27. Dr. Mulligan was fire surgeon of Norristown. He is survived by his wife, a daughter, and a son.

○ **Herbert Payne Fisher,** Philadelphia; University of Pennsylvania School of Medicine, 1896; aged 70; died on Aug. 5. Dr. Fisher was a major in the Army Medical Reserve Corps during World War I. He is survived by his wife and one daughter.

Joseph A. Turner, Philadelphia; Medico-Chirurgical College of Philadelphia, 1908; aged 57; died July 20 after an illness of 2 months. Dr. Turner was a medical inspector for the Bureau of Health for the past 20 years. He is survived by his wife.

○ **Albert P. Weaver,** Philadelphia; University of Pennsylvania, 1892; aged 82; died suddenly at the Presbyterian Hospital on June 26. Dr. Weaver was a second cousin of General John J. Pershing and maintained a limited practice until his death. He is survived by his widow and one son.

Eugene Swayne, Philadelphia; Medico-Chirurgical College of Philadelphia, 1905; aged 67; died on Aug. 14. Dr. Swayne was a veteran of the Spanish-American and World Wars. At the time of his death he was serving as a major in the U. S. Army. He was a direct descendant of William Penn.

Carl Smith, Philadelphia; Temple University School of Medicine, 1906; aged 68; died on July 30. Dr. Smith was a member of the faculty of Temple University School of Medicine for 12 years and a medical inspector for the Philadelphia Board of Health for 20 years. He is survived by his wife and 2 daughters.

○ **Henry Baer Ingle,** Philadelphia; University of Pennsylvania School of Medicine, 1902; aged 63; died on Aug. 10. During World War I, he was a captain in the Medical Corps serving at Camp Lewis, Wash., and in France at Base Hospital 93, A. E. F. Dr. Ingle

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was a Fellow of the American Medical Association. He is survived by his wife and 3 brothers.

○ **Isadore Kaufman,** Philadelphia; University of Virginia Department of Medicine, 1904; aged 59; died on Aug. 11. Dr. Kaufman, a Fellow of the American College of Physicians and the American Medical Association, specialized in tuberculosis. He was a member of the board of directors of White Haven Sanatorium and was on the staffs of Kensington Dispensary and Abington Memorial Hospital. He is survived by his wife, a daughter, and a son.

○ **Abner R. Renninger,** Philadelphia; Medico-Chirurgical College of Philadelphia, 1899; aged 66; died July 28 at Burlington County Hospital, Mount Holly, N. J., from injuries suffered in an automobile accident a week previously. Dr. Renninger was ophthalmologist at the Eastern Penitentiary and was a member of the staffs of Joseph Price Memorial Hospital and Children's Hospital in Philadelphia and the Coatesville Hospital. He was a member of the Sons of the American Revolution. He is survived by his widow and one daughter.

Percy L. Jones, Erie; University of Tennessee College of Medicine, 1897; aged 66; died on Aug. 9. Dr. Jones held the rank of Colonel, United States Army, retired. During World War I he was in charge of the U. S. Army Ambulance Service attending French troops. Later he was commander of the army hospital at Fort Leavenworth, Kansas. At the time of his death he was director of Hamot Hospital, Erie. He was a Fellow of the American College of Surgeons and of the American Medical Association.

○ **Frank C. Blessing,** Pittsburgh; University of Pittsburgh Medical School, 1899; aged 65; died Aug. 19, at Mercy Hospital, after 10 days' illness. Dr. Blessing, through 3 decades widely and favorably known for his service in obstetrics, was a member of the staff of the South Side Hospital. He represented the Allegheny County Medical Society in the House of Delegates of The Medical Society of the State of Pennsylvania from 1936 to 1939 inclusive. He once served on the Pittsburgh Civil Service Commission. In recognition of his services to the community as a physician and as a civic leader, a testimonial dinner was given in his honor last fall. Dr. Blessing is survived by his wife, 2 daughters, and 3 grandchildren.

○ **John P. Crozer Griffith,** Philadelphia; University of Pennsylvania, 1881; aged 85; died July 29, at his summer home in Devon, after several months' illness. Dr. Griffith was professor emeritus of pediatrics at the University of Pennsylvania Medical School where he had been a member of the faculty since 1889. At the time he received the degree of Doctor of Medicine he also received his Ph.D. He became a member of the faculty of the School of Medicine of the University of Pennsylvania as an instructor in clinical medicine in 1889 and was named professor of pediatrics in 1913, which position he maintained until recently. He had been visiting physician at Children's Hospital and consulting physician at Women's Hospital and at St. Christopher's Hospital for Children. Dr. Griffith was also consulting pediatrician at Abington Memorial Hospital, Jewish Hospital, Misericordia Hospital, and Babies Seashore Hospital. He was a member of the American Pediatric Society, the Association of American Physicians of which he served as treasurer from 1900 to 1918, of the Philadelphia Pediatric Society whose first president he was, of the American Association of Teachers of Diseases of Children, the College of Physicians of Philadelphia, and a corresponding member of the Societe de Pediatrie, Paris. He was the author of several volumes on children's diseases and was editor for a number of years of the Proceedings of the College of Physicians of Philadelphia. He was a member of the Historical Society of Pennsylvania and the Horticultural Society. Dr. Griffith's wife died 5 years ago.

Mrs. Grace Garard Crumrine, wife of Clarence A. Crumrine, M.D., of Washington, died on July 26.

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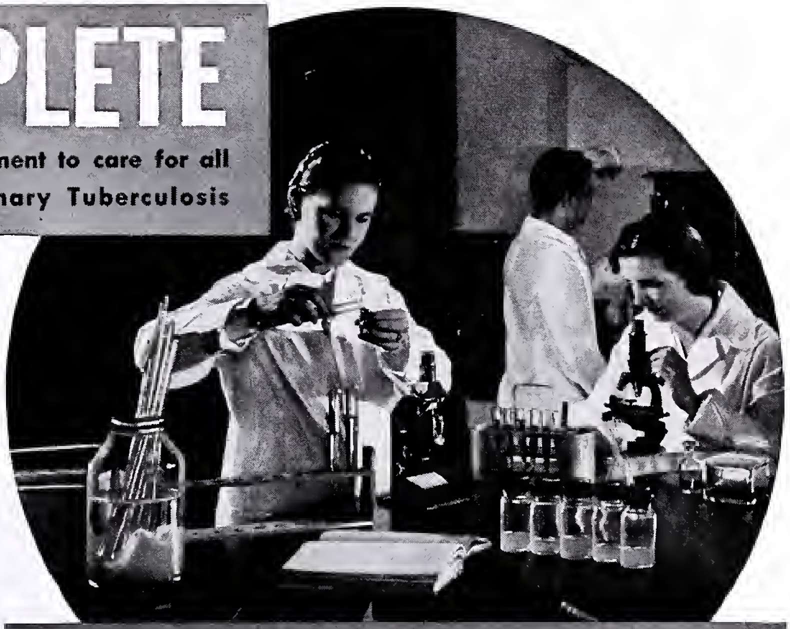

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Miscellaneous

Dr. Joseph L. T. Appleton, who has been acting dean of the School of Dentistry at the University of Pennsylvania, has recently been officially elected to that position to succeed Dr. Charles R. Turner, who will continue to serve on the teaching staff.

Charles A. Zeller, M.D., who has been superintendent of the Farview State Hospital at Waymart, became superintendent of the Philadelphia State Hospital at Byberry on Aug. 31, succeeding Herbert C. Woolley, M.D., who recently tendered his resignation and announced his plans to retire.

The Medical Alumni Association of the University of Pittsburgh is holding a dinner at the Hotel William Penn, in the Cardinal Room, Wednesday, Oct. 8, at 6:30 p. m. The meeting will be held in conjunction with the annual session of The Medical Society of the State of Pennsylvania. Tickets will be available at the registration desk.

Pediatric Clinic Day was held at the Windber Hospital, June 25, in conjunction with the regular meeting of the Pittsburgh Pediatric Society. The following physicians appeared on the program: Drs. Hyman A. Slesinger, Elwood W. Stitzel, Harold Antiles, and Paul J. McGuire. An outing was held following the scientific program.

The forty-sixth annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held at the Palmer House, Chicago, Oct. 19-23. The academy's program consists of one general scientific meeting on the morning of the first day, separate programs for the two specialties on alternate afternoons, and instructional courses every morning beginning on Tuesday, Oct. 21.

The Pennsylvania Psychiatric Society will hold its third annual meeting as a dinner meeting at 6:30 o'clock, Thursday evening, Oct. 9, 1941, in the Hotel William Penn, Pittsburgh. The presidential address will be delivered by Dr. Henry I. Klopp, of Allentown. Dr. William C. Porter, Lieut. Col., M. C., U. S. A., will speak on "Psychiatry and the National Defense." For reservations, write Dr. LeRoy M. A. Maeder, 206 S. 13th St., Philadelphia, Pa.

A state meeting on "Nutrition and Defense" will be held in the Forum, Harrisburg, Sept. 26, from 10 a. m. to 4 p. m. The aim is to discuss nutrition in action in Pennsylvania. Prominent national and state speakers will be on the program. Dr. Herbert T. Kelly, Philadelphia, chairman of the Committee on Nutrition of The Medical Society of the State of Pennsylvania, will represent the medical profession. All physicians in Pennsylvania are cordially invited.

Drs. Desiderio Roman and Chevalier L. Jackson, Jr., both of Philadelphia, were elected international president and international first vice-president, respectively, of the International College of Surgeons during the closing session of that organization's recent Mexico City assembly.

Dr. Roman, who was president of the United States Chapter of the college, succeeds Dr. Fred H. Albee of New York City. Dr. Roman is chief surgeon at St. Luke's Hospital and Children's Medical Center, and is consultant to the Wilmington Memorial Hospital. Dr. Jackson is professor of bronchoscopy at Temple University Medical School and a surgeon at Temple University and Chestnut Hill Hospitals.

The elections ended the assembly during which 143 United States surgeons were officially inducted into the college.

The Biological Photographic Association, an international group of photographers in the natural sciences, will hold its eleventh annual meeting in the Hotel Buffalo, Buffalo, N. Y., Sept. 11-13, 1941.

The program, in which a number of outstanding photographers and other technical experts will participate, emphasizes this year methods and processes which are likely to contribute to the national defense.

The annual salon, now well known to photographers through the pages of the photographic magazines, will again be a prominent feature of the meeting. Visitors are welcome.

For further information, write the Secretary of the Biological Photographic Association, University Office, Magee Hospital, Pittsburgh, Pa.

AT THE ANNUAL MEETING of the American College of Chest Physicians held at Cleveland, June 2, the Pennsylvania Chapter of the college was organized and the following officers were elected: Drs. Russell S. Anderson, Erie, president; Harry J. Treshler, Cresson, vice-president; and Edward Lebovitz, Pittsburgh, secretary-treasurer.

Dr. John H. Bisbing, Reading, is the governor of the college for Pennsylvania, and Dr. C. Howard Marcy, Pittsburgh, is regent for the district comprising Delaware, District of Columbia, Maryland, New Jersey, and Pennsylvania. Dr. Frank Walton Burge, Philadelphia, is the chairman of the Board of Regents of the college, and Dr. William Devitt, Allenwood, is a past president.

Dr. Chevalier L. Jackson was elected as an associate editor of the official journal of the college, *Diseases of the Chest.*

DR. WILLIAM HARVEY PERKINS, professor of preventive medicine at Tulane University Medical School, has been named dean of Jefferson Medical College of Philadelphia.

Dr. Perkins, who was graduated from Jefferson in the class of 1917, succeeds Dr. Henry K. Mohler, who died on May 16.

Dr. Perkins has served in various medical posts both in this country and the Orient since receiving his degree. He went to Thailand in 1919 under the auspices of the American Presbyterian Mission and in 1926 was made professor of medicine at the native university in Chulalongkarana, where he remained until 1930. While there he was decorated by the Siamese Government with the Order of the White Elephant.

Dr. Perkins won special recognition in the United States in research into hookworm infection while working under the sponsorship of the Rockefeller Foundation from 1925 to 1926. After one year's instructorship at Tulane University Medical School, he was promoted to professor and director of the department of preventive medicine.

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BOOK REVIEWS

FRANK HOWARD LAHEY BIRTHDAY VOLUME. June 1, 1940. 466 pages. Springfield, Ill.: Charles C. Thomas.

To commemorate Dr. Frank H. Lahey's sixtieth birthday, his associates, friends, and others have issued a volume of papers, largely surgical, covering a varied field. Some of these many friends have produced a work which, while specifically honoring Dr. Lahey, nonetheless has done honor to themselves and to the medical profession as a whole. Without mentioning names or subjects, it should be emphasized that some of the best articles of the book are by young men of yet unknown reputations. When a man of established standing writes—even though he be careless or repetitious—the medical reader is likely to be uncritical; the name alone suffices. The young man must write with accuracy and assurance.

This volume comprises a testimonial of appreciation and affection to one of the most distinguished surgeons of the present generation, who is now president of the American Medical Association. The majority of the papers deal with surgical conditions, in the treatment of which Dr. Lahey has been a prominent exponent. This is a noteworthy tribute to a great surgeon.

A TEXTBOOK OF MEDICINE (by American authors): Edited by Russell L. Cecil, A.B., M.D., Sc.D., professor of clinical medicine, Cornell University Medical College; associate attending physician, New York and Bellevue Hospitals, New York City. Associate editor for Diseases of the Nervous System: Foster Kennedy, M.D., F.R.S.E., professor of clinical neurology, Cornell University Medical College; attending physician, New York Hospital; visiting physician in charge, Neurological Service, Bellevue Hospital; consulting physician, New York Neurological Institute. Fifth edition, revised and entirely reset. 1744 pages with 173 illustrations. Philadelphia and London: W. B. Saunders Company, 1940. Cloth, $9.50.

The work of Russell L. Cecil in compiling the work of 130 authors of note into such a remarkable textbook of medicine calls for the greatest commendation. There is no subject in medical literature or study which is not fully covered and that by an author who is very well versed in his special field.

The book should be of especial value at the present time as it covers not only the so-called local diseases but gives in detail the diagnosis and treatment of tropical diseases, many of which will be encountered in the future when our armed forces are placed in locations where they will be subject to such diseases.

The subject of deficiency diseases is very well covered, as is also the chapter on diseases of metabolism—two conditions which are coming more to the front each year.

This textbook should appeal to all general practitioners of medicine as it is really an encyclopedia of medicine and should be in the office of every physician who desires to keep abreast of medical knowledge.

All medical organizations are actively engaged in promoting graduate education among their members, and there is no volume which has come to our attention which better fills the need of those who are earnestly endeavoring to increase their knowledge in order to render the service which the profession has always given to the public.

INTRODUCTION TO MEDICAL BIOMETRY AND STATISTICS. By Raymond Pearl, professor of biology in the School of Hygiene and Public Health, and in the Medical School, The Johns Hopkins University. Third edition, revised and enlarged. 537 pages with 121 illustrations. Phladelphia and London: W. B. Saunders Company, 1940. Cloth, $7.00.

This third edition of a popular and well-known text follows the plan and intent of previous editions in being essentially a book for beginners in biometric work in the fields of medicine and public health. The volume retains the distinction of being the American standard in this field. A new chapter on technics of measuring variation presents a useful technic for fixing abscissal limits in forming frequency distributions, and an exceedingly valuable method for the comparison of groups in respect to a number of measured characters. The addition of a set of tables for quickly determining the statistical significance of differences between means will prove useful to many investigators. Many new illustrations and technics have been added in this edition. This book is recommended for beginners in biometric work.

PROGRESS IN MEDICINE. A Critical Review of the Last Hundred Years. By Iago Galdston, M.D. With a foreword by Henry E. Sigerist, M.D. New York and London: Alfred A. Knopf, 1940. Price, $3.00.

This book is the story of the rise and decline of ideas, theories, and convictions put forth, examined, and in some cases challenged and abandoned. The story of several great men, on whose genius the progress of medicine has rested, is included in this volume. It is the story not only of what has happened in medicine but also of how and why it happened and of the men who were the principal actors in this great drama of human progress.

THE 1940 YEAR BOOK OF PUBLIC HEALTH. Edited by J. C. Geiger, M.D., Dr. P.H., director of public health, City and County of San Francisco; clinical professor of epidemiology, University of California. Chicago: The Year Book Publishers, Inc., 1940. Price, $3.00.

This volume is a "reader's digest" of 421 articles out of more than 3000 which were submitted to Dr. Geiger from literature of the entire world. At the end of 296 of these articles an editorial comment appears. The subjects covered in this book are: communicable diseases and epidemiology, food and milk, nutrition, housing, laboratory, industrial hygiene, administration, child hygiene, health education, and statistics. This book serves not only as a quick review but also as a permanent reference. It is recommended to those interested in the progress of public health.

A FAMILY DOCTOR'S NOTEBOOK. By I. J. Wolf, M.D. New York: Fortuny's Publishers, Inc., 1940. Price, $2.00.

This very interesting book contains a small group of subjects which both physicians and laymen will find entertaining. The bitter controversy between the homeopathic and allopathic physicians is described in the chapter on drugs. No such controversy exists in modern medical training, but it is a point which should be known if one is to appreciate the evolution of the use of drugs. The essay on the important physician-patient relationship is excellent. This book is well recommended to every physician, medical student, and layman interested in good medical care.

CLINICAL UROLOGY. By Oswald Swinney Lowsley, A.B., M.D., F.A.C.S., director of the Department of Urology (James Buchanan Brady Foundation) of the New York Hospital, and Thomas Joseph Kirwin, M.A., M.S., M.D., F.A.C.S., attending surgeon of the Department of Urology (James Buchanan Brady Foundation) of the New York Hospital. 2 volumes, 1700 pages. 390 illustrations (11 in color), including nearly 1000 original drawings made at the operating table by William P. Didusch. Baltimore: The Williams & Wilkins Company, 1940. Price, $10.00 a set.

These very practical and well-written volumes deal with the nature, diagnosis, and treatment of the anomalies and diseases of the genito-urinary tract according to the present state of knowledge. William P. Didusch, foremost illustrator in the urologic field, has drawn each step of surgical technic so completely that more definite information is gained than from observation of actual operations. The accompanying legends fully explain the drawings, thus freeing the text from lengthy descriptions. Every condition, even the rarest one, is taken up. The urologic diseases of women, children, and adult males are considered.

The instruments and other equipment needed are considered in these volumes as well as the problems of anesthesia in urology. These 2 volumes should be in the hands of every surgeon, including those removed from metropolitan surgical centers, who must perform, when necessary, operations and procedures upon the genito-urinary organs.

IT IS YOUR LIFE. Keep Healthy—Stay Young—Live Long. By Max M. Rosenberg, M.D., formerly in charge of Clinical Laboratory, O. P. Department, Beth Israel Hospital; clinical assistant in internal medicine, Beth Israel Hospital; clinical assistant in pediatrics, Gouverneur Hospital, New York. 450 pages, illustrated. New York: The Scholastic Book Press, 1940. Price, $2.50.

This book on health, written by a physician, is for the laity. Generally speaking, the subject matter is presented in simple language. Emergency and simple measures to be used for ordinary ailments are described. This book is another to be classified as a sort of family medical adviser. However, it contains prescriptions which should be filled only on physicians' orders.

VITAMIN THERAPY IN GENERAL PRACTICE. By Edgar S. Gordon, M.D., M.A., associate in medicine and instructor in physiologic chemistry, University of Wisconsin, and Elmer L. Sevringhaus, M.D., F.A.C.P., professor of medicine, University of Wisconsin; editor, Department of Endocrinology, *The Year Book of Neurology, Psychiatry, and Endocrinology*. Chicago: The Year Book Publishers, Inc., 1940. Price, $2.75.

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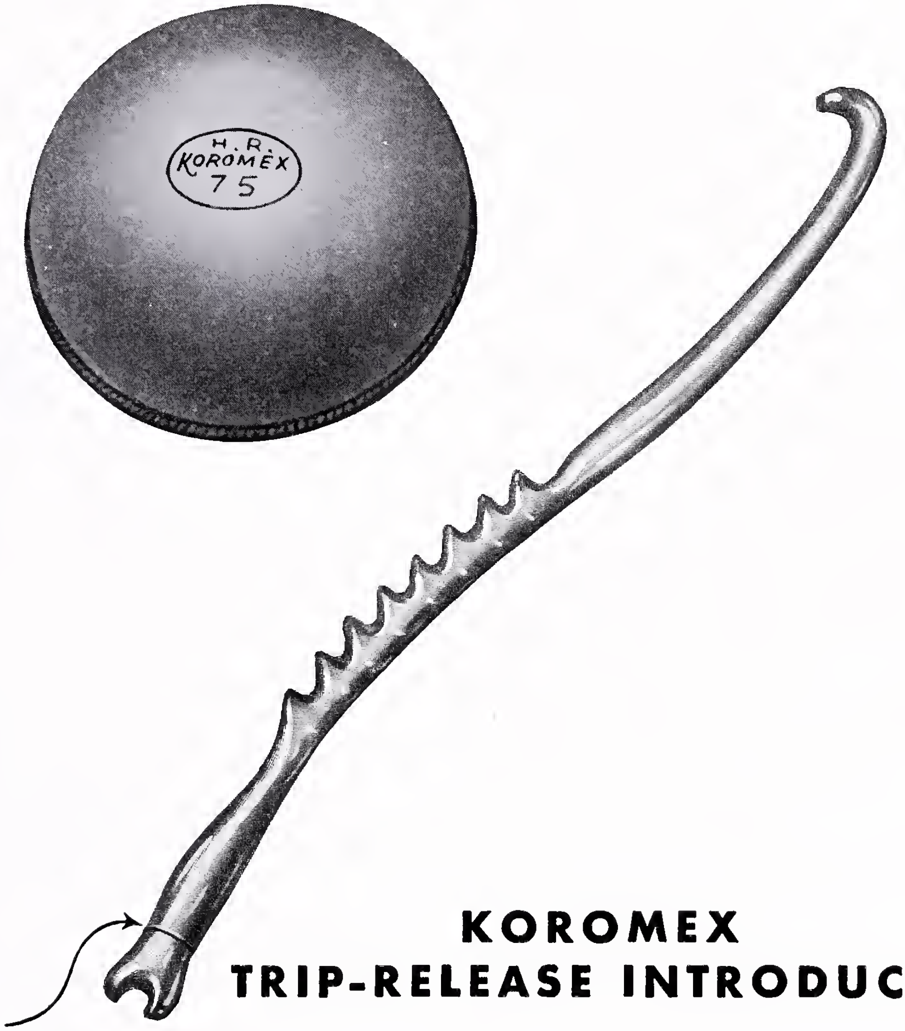

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OFFICE UROLOGY. With a Section on Cystoscopy. By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania; consulting urologist, Delaware County Hospital; special consultant to United States Public Health Service; member of Board of Directors, American Social Hygiene Association and American Neisserian Medical Society. With 443 illustrations, 19 in color. Philadelphia and London: W. B. Saunders Company, 1940. Price, $10.00.

This volume is written in a clear and understandable manner for surgeons and general practitioners as well. So personal is it that any physician, although not interested especially in this subject, can read it with pleasure for its sane philosophy of practice so suitable to any field of practice. One chapter of especial interest is the one on the sexual problem. Chapters on the general methods of treatment, including newer medicaments, and on cystoscopy and roentgenography are of special interest. This book is well recommended not only to the urologist but also to the general practitioner who, although not always of his own choosing, must treat some urologic cases.

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FOREIGN BODIES LEFT IN THE ABDOMEN. The Surgical Problems: Cases, Treatment, Prevention. The Legal Problems: Cases, Decisions, Responsibilities. By Harry Sturgeon Crossen, M.D., School of Medicine, Washington University, and David Frederic Crossen, LL.B., School of Law, Washington University, St. Louis, Mo. With 212 illustrations, including 4 color plates. St. Louis: The C. V. Mosby Company, 1940. Price, $10.00.

More than 300 cases of a sponge, tape, or towel being left in the abdomen are discussed in this book. By means of case histories, readers are taught prevention, treatment, and responsibility. In the legal chapters are listed all the cases that have come to appellate trial, a discussion of the decisions, and an outline of the responsibility of the physician. The medical profession has been looking for a book on this difficult problem for a long time. It is recommended to physicians and lawyers.

THE DOCTOR AND THE DIFFICULT CHILD. By William Moodie, M.D., F.R.C.P., D.P.M., medical director, London Child Guidance Clinic and Training Center. New York: The Commonwealth Fund, 1940. Price, $1.50.

Dr. Moodie an English psychiatrist with long experience in treating children, has written this book in simple, unaffected language, offering to the pediatrician, general practitioner, and intelligent layman practical suggestions with regard to emotional problems encountered in daily practice.

The author shows the parent's point of view and how one can interpret a child's behavior through drawings, play, and fantasies. Physical illness and mental defects play an important part in the child's disturbance of behavior and personality. Helpful suggestions for winning the young patient's confidence are discussed as well as the satisfaction of a child's emotional needs. This contribution to the practice of child guidance is recommended to pediatricians, general practitioners, and laymen interested in the development of children.

DIAGNOSIS AND TREATMENT OF MENSTRUAL DISORDERS AND STERILITY. By Charles Mazer, M.D., F.A.C.S., assistant professor of gynecology and obstetrics, Graduate School of Medicine, University of Pennsylvania; gynecologist to the Mount Sinai Hospital, Philadelphia; and S. Leon Israel, M.D., F.A.C.S., instructor in gynecology and obstetrics, School of Medicine, University of Pennsylvania; associate gynecologist to the Mount Sinai Hospital, Philadelphia. With 108 illustrations. New York and London: Paul B. Hoeber, Inc., 1941. Price, $6.50.

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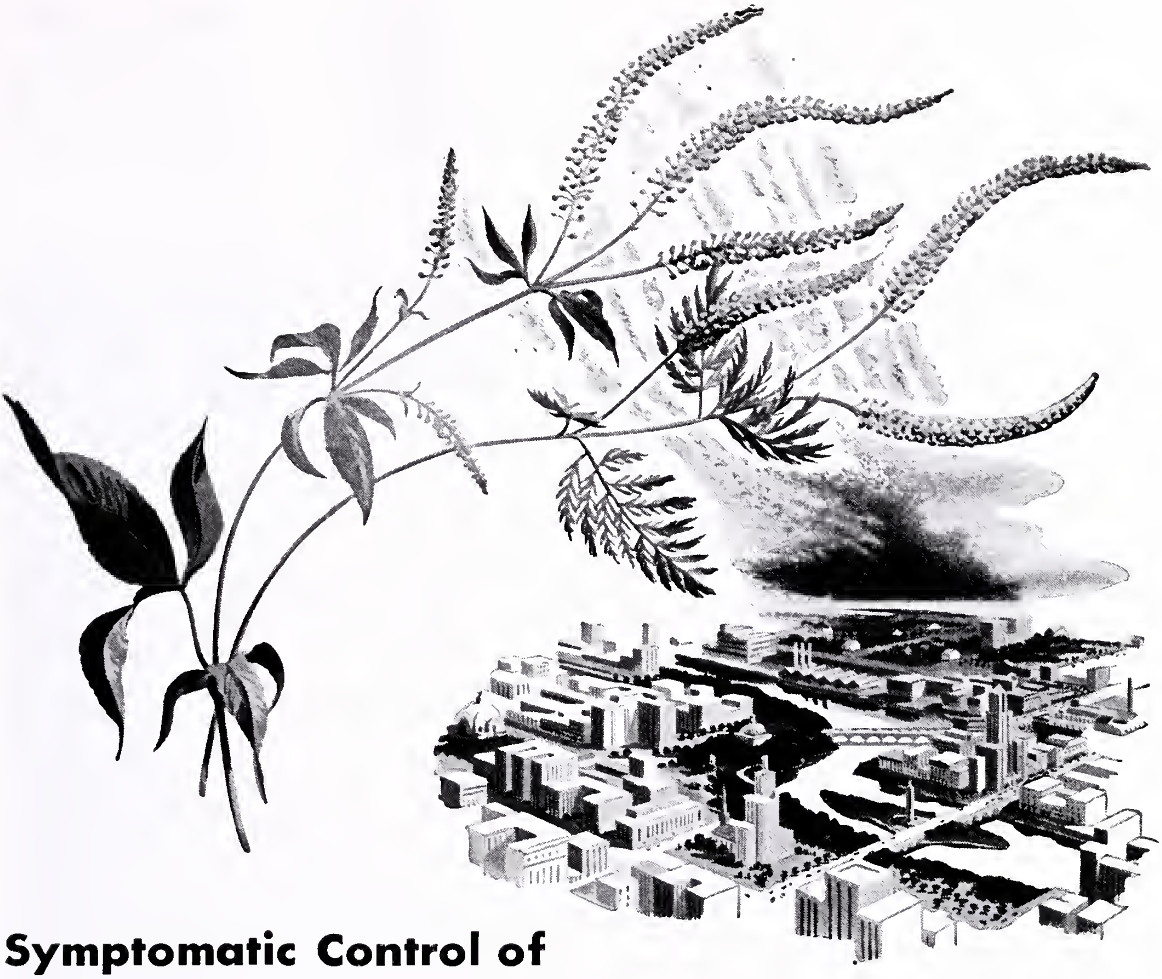

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and treat the numerous women suffering from menstrual disorders and sterility. Menstrual disorders and infertility are closely related and must be considered together. Puberty in the female, various phases of the menstrual cycle, causes of amenorrhea, uterine bleeding, and various factors of sterility in the female and male are a few of the subjects covered in this excellent volume. Practically every sound, proved method of treatment, including radiotherapy and all accepted endocrine technics, is presented in full detail. The authors have included a very useful appendix listing endocrine products for everyday practice.

THE GROWING HEALTH MENACE OF RATS

The growing health menace of the rat is pointed out in *Hygeia, The Health Magazine* for September by James Nevin Miller, Washington, D. C., who warns that "During the past 4 years rat-bite fever, also known as murine fever, has been spreading northward and inland from its former stronghold on the Gulf and southeastern coasts. This year it has invaded Washington, D. C., and while only 2 cases have been reported thus far, the potential menace to the entire nation of this destroyer of health can scarcely be exaggerated. . . .

"This animal [the rat] is the world's most notorious disease carrier, with perhaps two exceptions, the tick and the flea. And when it is realized that the rat, in addition to its own ability as a carrier, is often infested with both of these death-dealing agencies at the same time, its true worth as a human health menace is fully appreciated.

"No less than 7 major diseases and illnesses are known by medical science to be transmitted or caused by rats and almost a dozen more are under suspicion. Besides bubonic plague and typhus fever, the list includes pneumonic plague, jaundice, parasitic mange, tapeworm, and perhaps foot and mouth disease."

Among the disease germs which rats are suspected of carrying, Mr. Miller says, are those of sleeping sickness, leprosy, and infantile paralysis. They are also responsible for the transfer of certain ailments, notably equine influenza, to other animals.

Concerning rat-bite fever, the author says: "For several years rat-bite fever has been spreading northward and inland from its original stronghold in the deep South. Its recognition as a communicable disease, subject to control, is recent. According to the Public Health Service, the cause is a spiral organism which can be found in the infected animal's saliva and which is injected into a human being when a rat bites him. No inoculation has proved practical to prevent anyone from catching rat-bite fever, nor is there any remedy for it. It can be recognized by a rash that spreads across the abdomen and around the small of the back about 5 days after the fever starts. The symptoms and discomfort are similar to those of influenza, but far more severe."

Red squill powder, Mr. Miller says, "has been shown by government tests conducted on a nation-wide basis and under all conceivable conditions to be the safest and best rat poison in America. If properly used, it destroys at least 75 per cent of all rodents treated. This raticide is made from a kind of sea onion native to the Mediterranean countries. Toxic powders should be mixed, Uncle Sam says, which will insure a killing dose even if the rat eats only a small quantity of the poisoned baits. All rats poisoned in this way should die within 5 days. The poison paralyzes them. Baits used with red squill are fish, meat, cereals, fruits, and vegetables. . . .

"The best weapon against the four-footed predators is cleanliness, which means quick and efficient removal of garbage from homes, restaurants, hospitals, and industrial establishments. The other main approach to the problem, as far as the average householder is concerned, is to try to keep down their numbers by trapping and poisoning. The procedures are easily obtainable since all that is necessary is to phone the local health department for complete information. . . .

"Rats do not keep to the slums and the industrial and wholesale market areas. They go wherever there is food and cover, and today that means that they are swarming by the millions in most of our large cities. It is hard to determine which section of the nation suffers most from these rodents, but many investigators claim it is the Middle West, the big corn center, since rats are especially fond of this grain. West of the Rockies, domestic rats are found only in communities on the Pacific coast, in the valleys of formerly navigable rivers, and in a few other isolated places. This situation greatly reduces the disease hazard to human beings.

"Fortunately for the health of the nation, most big cities now have a police regulation requiring citizens to keep garbage and trash containers tightly closed.

"Fumigation with hydrocyanic acid gas is the Public Health Service's most effective means of reducing a large rat population aboard ships. In this connection two new pieces of equipment have been developed. One is a pump which forces the gas into the tiniest rat harborages. It can be operated easily by one man. The other apparatus is a more efficient type of gas mask that affords the fumigator fool-proof protection against the life-snuffing fumes of the poison."

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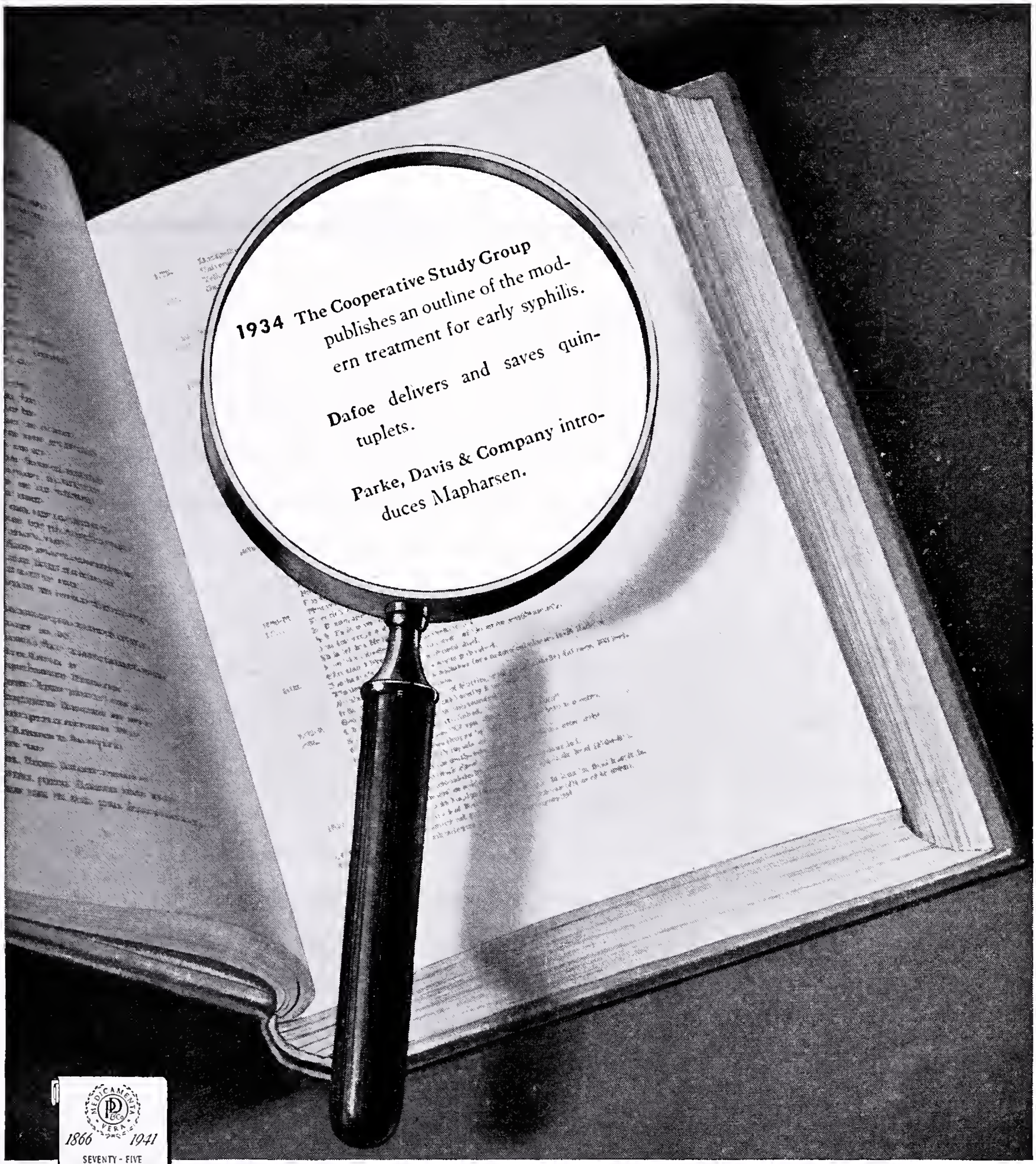

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2	2	2
3	4	4
4	6	6
5	8	8
6	10	10
7	12	12

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KUGELMASS: *"Newer Nutrition in Pediatric Practice."*

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(E) Editorials
(O) Officers' Department
(WA) Woman's Auxiliary

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IN TIMES OF STRESS

This is a period in our history as a nation when the great winds of change are blowing and we must each play a part in seeing that it is the chaff only which is carried away and that we retain the sound truths by which our form of society lives. The physician especially should by his training and his experience be fitted to comprehend that there are values whch are permanently a part of the human organism and that any plan for society which contravenes these built-in beliefs of the human race can succeed only for the brief duration of a period of mass hysteria. Destructive as a hysterical nation may be and great as may appear its successes, if its principles of action contradict the instinctive faiths of man, it is doomed to ultimate failure.

Hysteria is, however, a contagious phenomenon. A mass negation by an afflicted nation of the slowly developed code of social and international morality, if it leads to striking immediate successes, has a great influence on the stability of other nations. The weaker ones in each people begin to be uncertain of their own beliefs and to question whether perhaps indeed the very world has changed and the old truths, such as honor, tolerance, mercy, and the equal rights of the weak and the strong, been swept away. A nation which seriously questions its own beliefs is in danger of not standing firm.

Our knowledge of man and of man's reactions is perhaps as wide and is certainly more solidly founded than that of any other group in society. We have dealt with this psychosomatic entity long hours of the day and night since the time when on entering school we first took scalpel in hand to dissect the structures of the human body. We have explored not only man's construction but have learned and are constantly learning more of his functions. There we have found laid down intricate patterns of reflex and hormonal interactions, eons old, and plainly related to adaptation to a world environment. Not less certainly have we observed in the varied and recurring crises in man's affairs, in which our assistance is implored, the constancy of man's fundamental mental patterns, his fears, his aspirations, his instinctive devotions.

The physician knows that not only the essential mechanisms of man's body are unchanging except in terms of many thousands of years but also that man's essential beliefs in what he terms good and what he feels to be evil in human relations have a similar unchangeable quality. Built in to the warp and woof of the human mind and body by endless cycles of group living, these beliefs are as permanent in their way as are the mechanisms of respiration.

The actions of man and the actions of nations are readily swayed toward good or bad ends, and mob psychology may even persuade the individuals of a mob that what they do is good, and silence for a time the deeper individual knowledge that the action is evil. But mob hysteria is a tempest of wind that stirs the surface waters now this way and now that and man's own knowledge of what is good and evil is more akin to the eternal motion of the tides and the flow of the rivers to the sea.

There are causes of conflicts between nations in which the right and the wrong are far from clear. There are perhaps none in which there is not some right to both sides. In the present conflict, however, we have pledged ourselves to oppose a nation which has made it plain that it acts against some of man's deepest instincts of what is good in human relations. This nation has adopted faithlessness and treachery, intolerance and cruelty as a working code. It proclaims that its might gives it the right to subjugate weaker peoples. It proposes a world reorganized on such principles.

How far this hysterical crusade of the German people will carry them in the immediate future depends to a great extent upon the concerted efforts of our own nation. The quality of our effort depends in turn upon how deeply we feel the rightness of our cause.

We physicians who know that such an outburst of national hysteria can have no more effect on the ultimate form of human society than a gale would have on the ebb and flow of the tides must nevertheless as practical men recognize its destructive possibilities to our nation, to the people of our own generation, and to their children. In this period in which all things are questioned we may from our knowledge and experience affirm the validity and the ageless character of man's perception of plain right and wrong in human affairs. We may each serve as a firm mooring post for those weak vessels that might otherwise drift with the wind.—*Annals of Internal Medicine.*

ABREAST OF MEDICAL PROGRESS

The editorial conferees are convinced from their preview of the contents of this issue of *The Pennsylvania Medical Journal* that its pages offer to the inquiring practitioner information and advice that will help to keep him abreast of many of the phases of successful practice even in these kaleidoscopic days marked by both therapeutic triumphs and patriotic responsibilities for the medical profession. Read the issue from cover to cover including our advertisers' pages and those of all contributors, reporters, and commentators, then forward to the *Journal* office your constructive criticisms and suggestions looking toward a *Journal* increasingly helpful to an increasing number of readers.

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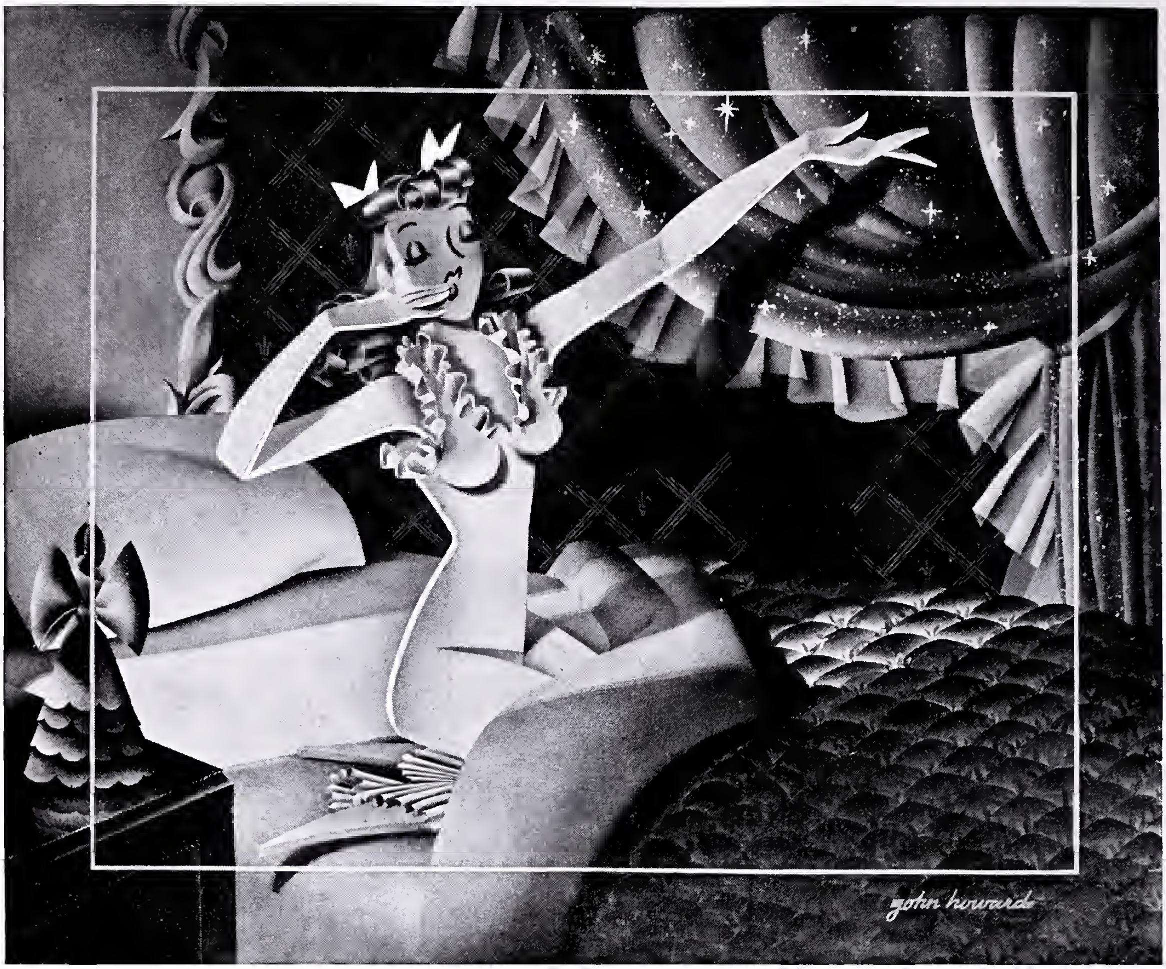

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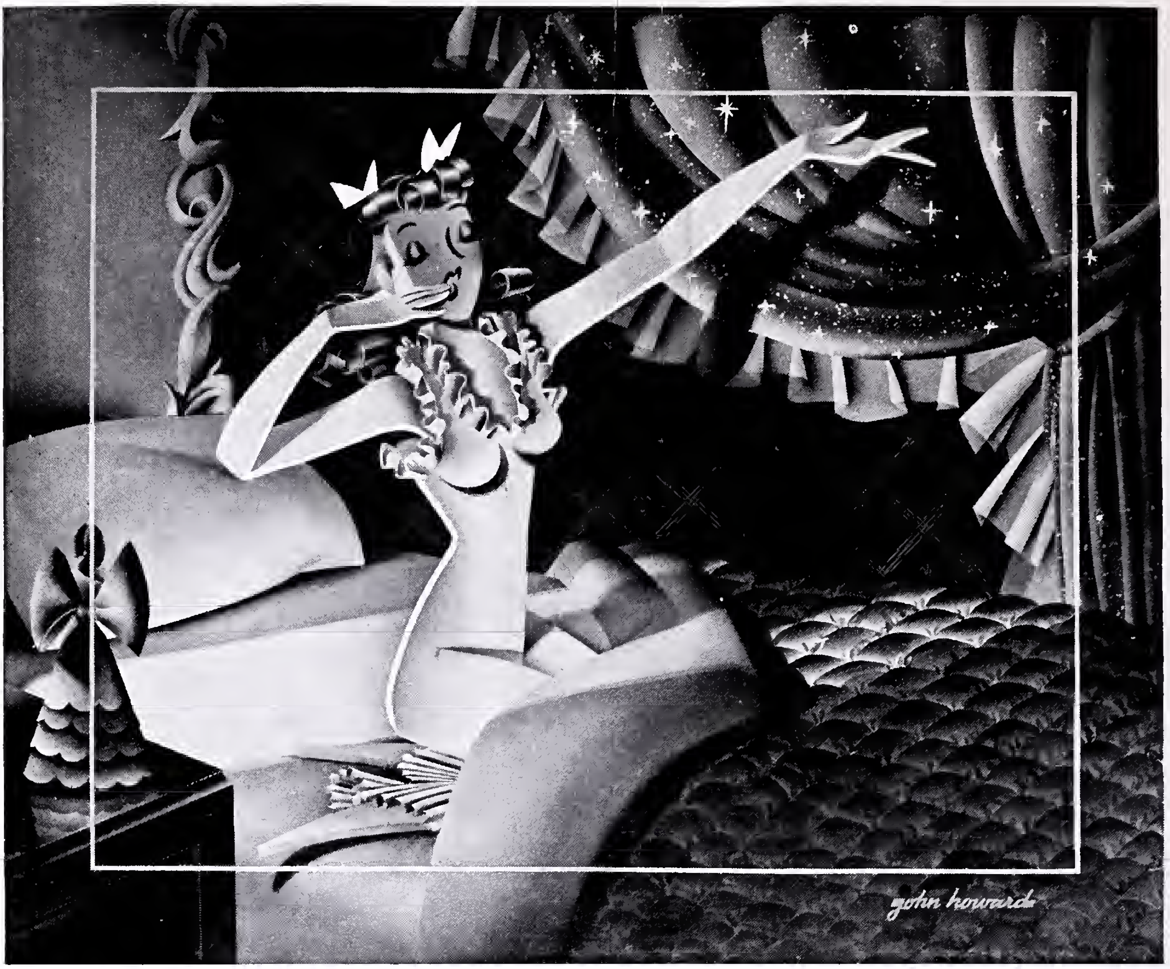

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For Stubborn Cases...

Petrolagar* with Cascara

Stubborn cases of constipation usually yield to Petrolagar with Cascara.

This preparation provides sufficient laxative effect to help restore normal bowel habit in chronic cases, yet it is mild enough for use in obstetrical cases. Each tablespoonful contains 13.2% of non-bitter aqueous extract of Cascara Sagrada.

The dose of Petrolagar with Cascara is one tablespoonful two to three times daily—gradually diminished. It has the advantage of exceptional palatability and continued effectiveness despite prolonged use.

Petrolagar with Cascara is available in 16 ounce bottles at all pharmacies and in the special Hospital Dispensing Unit at hospitals.

**Petrolagar—The trademark of Petrolagar Laboratories, Inc., for its brand of mineral oil emulsion—liquid petrolatum 65cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.*

Petrolagar Laboratories, Inc. • 8134 McCormick Boulevard • Chicago, Illinois

How to Use S-M-A Powder

EACH PACKAGE OF S-M-A* CONTAINS ONE MEASURING CUP

1 Empty one tightly packed measuring cup of S-M-A powder into bottle.

2 Add enough warm previously boiled water to make one ounce.

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3 Cap bottle and shake powder into solution. Feed at body temperature.

4 Easy, isn't it?

S-M-A READY TO FEED PROVIDES:

● 20 calories to the ounce, but more important, the nutritional value of S-M-A is that of a complete well-balanced food. When prepared as above, each quart provides:

10 mg. Iron and Ammonium Citrate
200 I. U. of vitamin B_1
400 I. U. of vitamin D
7500 I. U. of vitamin A

NORMAL INFANTS RELISH S-M-A—DIGEST IT EASILY AND THRIVE ON IT

*S-M-A, a trade mark of S-M-A Corporation, for its brand of food especially prepared for infant feeding—derived from tuberculin-tested cow's milk, the fat of which is replaced by animal and vegetable fats, including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride; altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and physical properties.

ACCEPTED AMERICAN MEDICAL ASSN.

S. M. A. CORPORATION • 8100 McCORMICK BOULEVARD • CHICAGO, ILLINOIS

1 LB. 2 OZ. NET (510 GM
PABLUM
T. M. REG. U. S. PAT. OFF. U. S. PAT. NO. 1,860,388
A thoroughly cooked and dried palatable mixed cereal food, vitamin and mineral enriched.
Composed of wheatmeal (farina), oatmeal, wheat germ, yellow cornmeal, powdered beef bone specially prepared for human use, sodium chloride, powdered dehydrated alfalfa leaf, powdered yeast and reduced iron; cooked thoroughly and dried.
Formula devised by Pediatric Research Foundation of Toronto to furnish not only high nutritive value, but also vitamins B₁ and G (riboflavin) and essential mineral elements (Calcium, Phosphorus, Iron and Copper).
REQUIRES NO COOK
Add milk or water, hot
Serve with milk or
MEAD JOHN
EVANSVILL
KEEP I
EATS

83/2-W.

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